SHELLS AND SEA LIFE

A Monthly Publication on Mollusks and Marine Life

$3.00 May, 1985 **Volume 17, Number 5**

Cuthona longi Behrens, 1985
Photo by Jeff Hamann

IN THIS ISSUE: Murex, Land shells, Seashell decor, Clams, Nudibranchs, Australian shells — and more!

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Volume 17 **Contents** Number 5

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EDITOR'S NOTES

It is time to repeat our policy regarding review of articles for **Shells and Sea Life.** We attempt to get all final copy articles back to the author for review and sign-off. The rapid publication cycle of our magazine makes author-review very difficult for non-U.S. authors but we stick very closely to policy if there is any serious nomenclatural question involved.

Personal Notes never go back to authors for review as they do not involve any nomenclatural problems. **Reader Forum** includes "opinions" which do not constitute final decisions with backup data. They are not subject to Editorial Board review.

"Articles" go through a simple review process to determine their suitability to **Shells and Sea Life** and the amount of further review required based on the material. These recommendations, made by Editorial Review Board members and others are rather closely adhered to and may require rejection or major revision of the article.

Since acquiring our own typesetting equipment in December, each article is in effect "reviewed in galley" which greatly decreases the chance of errors and typos remaining in the text.

* * *

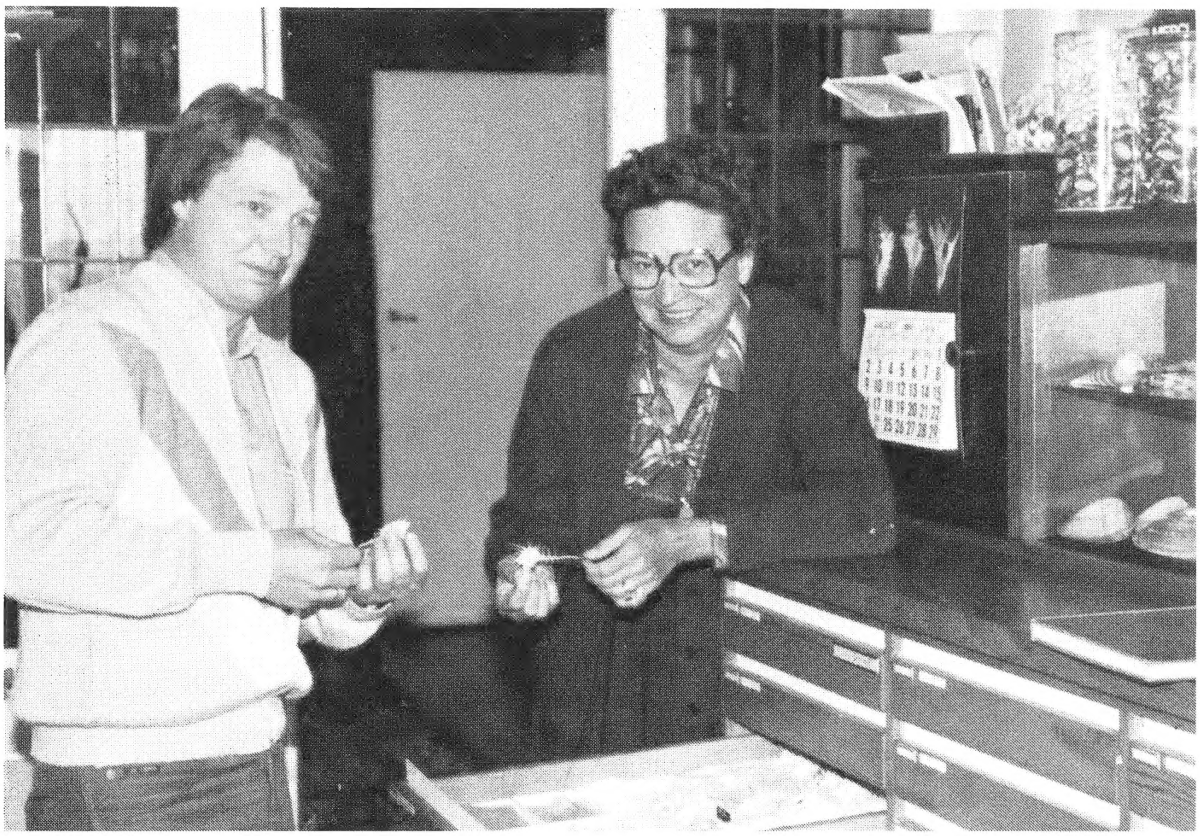
Cuthona longi Behrens, 1985
Cover photograph by Jeff Hamann

The species featured on the cover of this month's issue is a recently described species of aeolid nudibranch from the Gulf of California (Behrens 1985; Veliger 27(4): 418-422). I am pleased to dedicate this species, in name sake, to Steve Long for his 15 tireless years as editor and publisher of the **Opisthobranch Newsletter,** precursor to **SHELLS and SEA LIFE.** Steve's efforts and contributions to the field of malacology have been inspiring to many of our colleagues.

Cuthona longi, the first *Cuthona* described from the Gulf of California, was discovered and collected by Jeff Hamann while SCUBA diving off Isla Raza, Baja California, Mexico in July 1982. Jeff measured living animals up to 34 mm in length. This species can be easily separated from other northeastern Pacific tergipedid aeolids by the pale blue rhomboid patch on the head between the eyes and posterior to the rhinophores, and the distinctive opaque gold band on the cerata. Specimens and egg masses were collected on a leafy bryozoan growing near the base of a branched hydroid. — D.W. Behrens.

A review of the new species named by Roland Houart

Emily H. Vokes, Dept. Geology, Tulane University, New Orleans, LA 70118

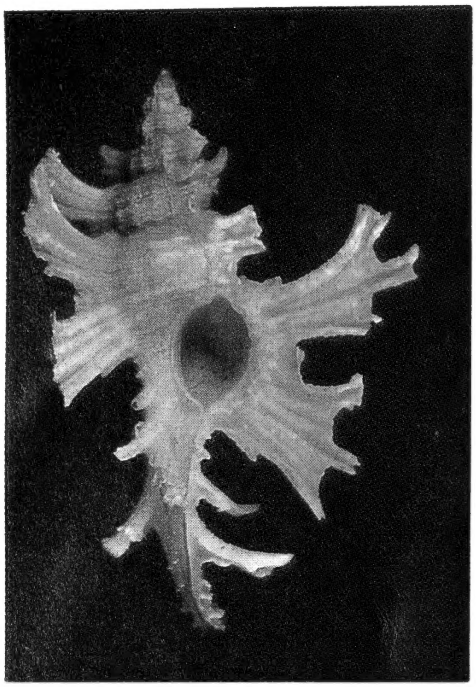


E. Vokes & R. Houart at his home in Belgium, June, 1984
Photo by Aurora Richards

The word "amateur" comes from the Latin *amator*, meaning one who loves. And Roland Houart is the latest in a long line of true lovers of mollusks, who labor among them for the sheer joy of it. Following in the footsteps of such illustrious malacologists as Philippe Dautzenburg, a rug merchant, and Maurice Cossmann, a railway station superintendent, Houart has a full-time job (as an inspector of Belgian schools), and dedicates his leisure to the study of the Muricidae. As one who loves the Muricidae equally well but who *does* get paid for it (research is an integral part of a professorship), I can appreciate his admiration for this fascinating group. Were I not lucky enough to have a job that permits my delving into the mysteries of the Muricidae as a part of it, I too would be one of the "dedicated amateurs" of the world.

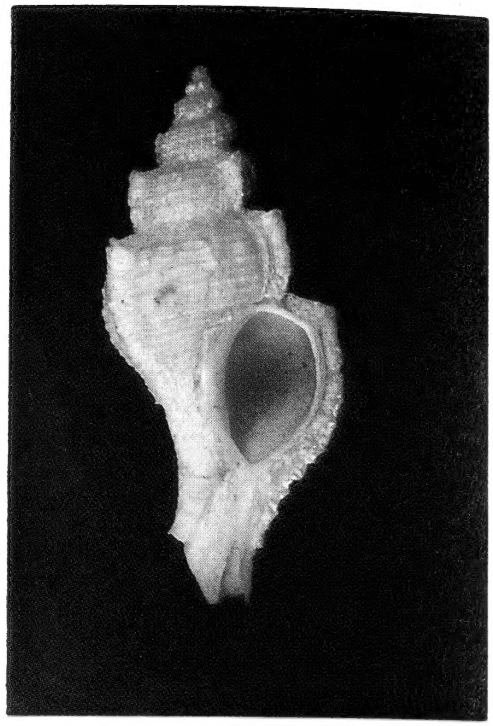
Houart described his first muricid in 1977, and it is a pity that because of the previous description of the same form by a Japanese worker we are deprived of his name, which in my opinion is a more fitting one. But such are the perils of nomenclature.

Except for this first one, all of the other species named since 1977, which number 15 at this writing, are valid. Comments follow a photograph of each species.

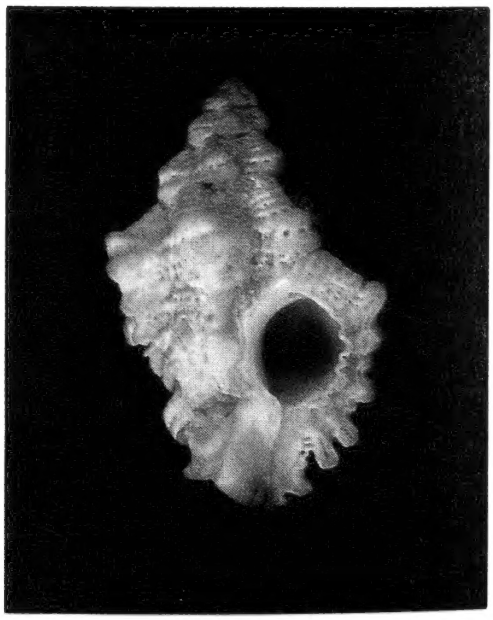


Chicoreus subtilis Houart, 1977, Soc. Belge Malac., Inf., Ser. 5(2):13, figs. 1-5. Paratype Houart collection 29.5 x 21 mm. As noted above, the name is preoccupied by *Pterynotus orchidifloris* Shikama, 1973. There is also a third name for this beautiful but enigmatic Indo-Pacific species: *Pterynotus celinamarumai* Kosuge, 1980 (originally spelled "*cerinamarumai*," in error, *fide* Kosuge *in litt.*). Although named as a *Pterynotus* by two authors, Houart's enlarged photographs (his figs. 3a-c) of the early whorls of the shell indicate that it is better placed in *Chicoreus*. Perhaps the subgenus *Torvamurex* Iredale, 1936 (type species: *Triplex denudata* Perry) should be revived for *C. orchidifloris* and *C. laqueatus* (Sowerby, 1841), its nearest relative. D'Attilio (1981, fig. 4) has illustrated the radula of *C. laqueatus*, which looks most like that of the Muricopsinae. But the shell morphology in no way suggests relationship with that group. This may be another of those "in-between" genera, like *Homalocantha* (with its muricine radula, muricopsine shell, and ocenebrine operculum), which remind us from time to time that taxonomy is not as cut and dried as we would wish.

All shell photographs by Roland Houart.

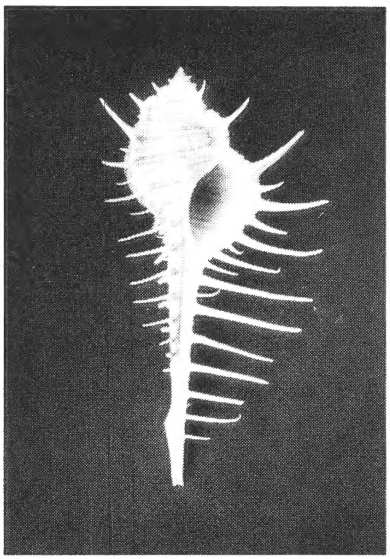


Ocenebra fairiana Houart, 1979, Soc Belge Malac., Inf., Ser. 7 (1):3, figs 1-4. Paratype Houart collection 27 x 12 mm. In a later paper (1982) Houart compared *O. fairiana* with two other closely related species also from West Africa ("*Murex*" *dearmatus* Odhner, 1923, and *Pteropurpura benderskyi* Emerson and D'Attilio, 1979) and concluded that they were easily distinguishable in shallow-water forms but were rather near each other in the deeper waters. However, the persistent three varices indicates that *Pteropurpura* is probably a better placement than *Ocenebra*, even though they lack the winged varices typical of *Pteropurpura*.

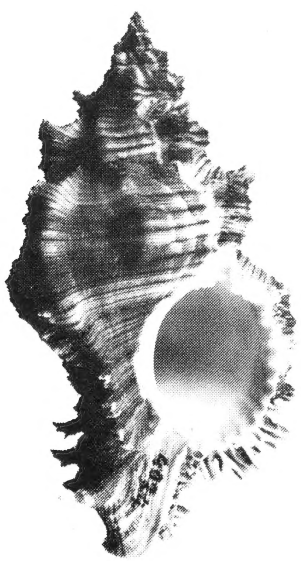


Favartia (*Favartia*) *burnayi* Houart, 1981, Soc. Belge Malac., Inf., Ser. 9(3):79, figs. 1-4. Paratype Houart collection 27.5 x 18 mm. This rather smooth, white

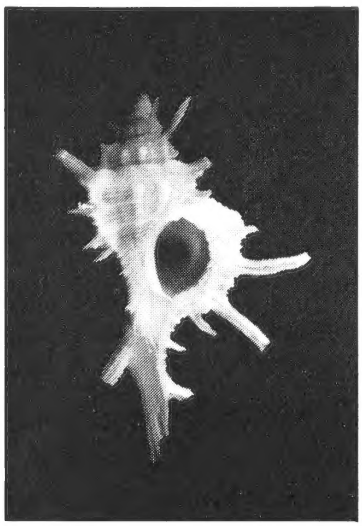
Favartia, from the Cape Verde Isles, was originally named *Murex solidus* A. Adams, 1853. Fortunately, that name is preoccupied, so the species described by Houart is the valid name for the form. It resembles the American *F. cellulosa* (Conrad, 1846) but is more angulate at the shoulder and is less fenestrate.



Murex poppei Houart, 1979, Soc. Belge Malac., Inf., Ser. 7(4):141, pl. 5, figs. 1-3; text figs. 1, 2. Paratype Houart collection 125 mm. Belonging to the Indian Ocean group of *Murex scolopax*, this species is unique in possessing a protoconch consisting of two and one-half angulate whorls, marked by approximately 17 axial ribs *on the last whorl of the protoconch.* Following the protoconch, the first teleoconch whorl has 12 axial ribs. which by the third whorl become 3 varices. In contrast, all other known species of *Murex s.s.* have a smooth protoconch and, in the case of *M. scolopax* (and almost all other species of *Murex s.s.*), only 9 axial ribs on the first teleoconch whorl.



Chicoreus (*Chicoreus*) *kilburni* Houart & Pain, 1981, Soc. Belge Malac., Inf., Ser. 10(1-4):51, pl. 3, figs. 1-4. Paratype Natal Museum T.2538 93 mm. This is a new name for the large brown *Chicoreus* from East Africa that has been cited by authors as *C. maurus* (Broderip, 1833). The latter is a smaller, purplish-colored form confined to the western Pacific.

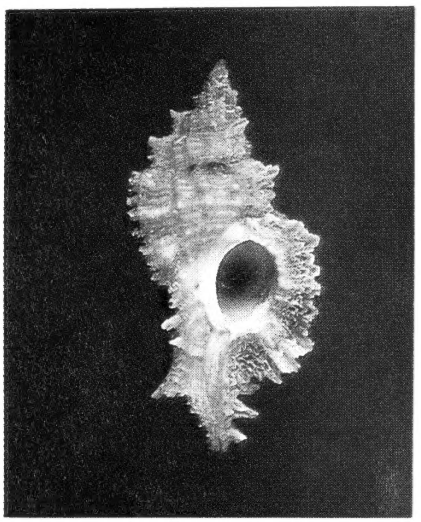


Chicoreus (*Chicoreus*) *boucheti* Houart, 1983, Venus, 42(1):27, pl. 1, figs. 1, 2; text figs. 3, 4. Holotype 31.2 x 22 mm. A western Pacific species that is immediately distinguishable from all its congeners by the possession of just three long foliated spines on each varix of the body-whorl. In overall appearance it most nearly resembles *C axicornis* (Lamarck, 1822) but differs substantially in detail.

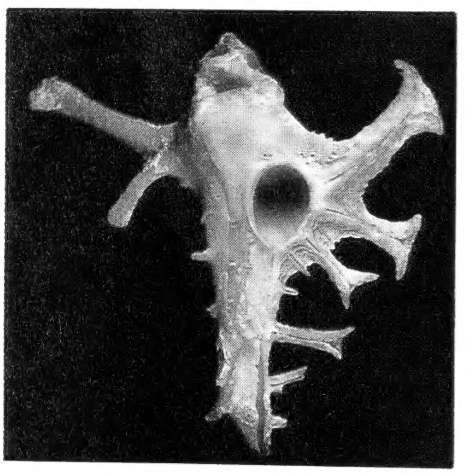
Our Apologies. Somehow, in the preparation of this magazine for printing, the photograph intended to be printed in this space was misplaced and could not be found in time for publication. We will include this photograph in a later edition.

Aspella vokesiana Houart, 1983, Venus, 42(1):31, pl. 1, figs. 5, 6. Holotype 14 x 6.1 mm. A typical small, white *Aspella*, this species, which is based upon a single specimen from Madagascar, is very similar to *A. mauritiana* Radwin and D'Attilio, 1976, from the same area; but

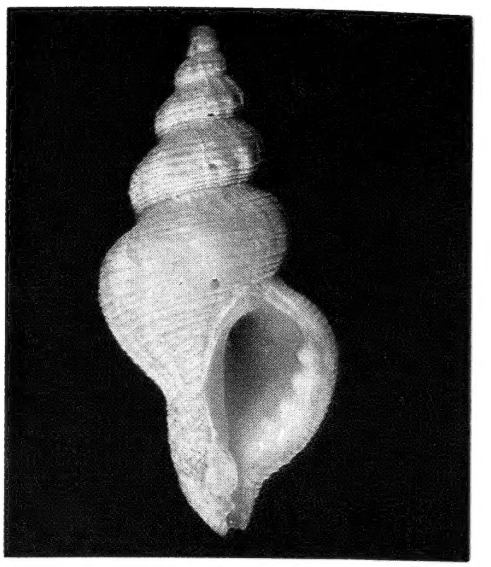
then all species of *Aspella* are remarkably similar, so much so that until recently all were considered to be "*Aspella anceps* (Lamarck)." The work of Radwin and D'Attilio (1976, p. 22-25, 220-227) demonstrated the astounding differences to be seen between these similar appearing forms, each having a unique pattern of intritacalx.



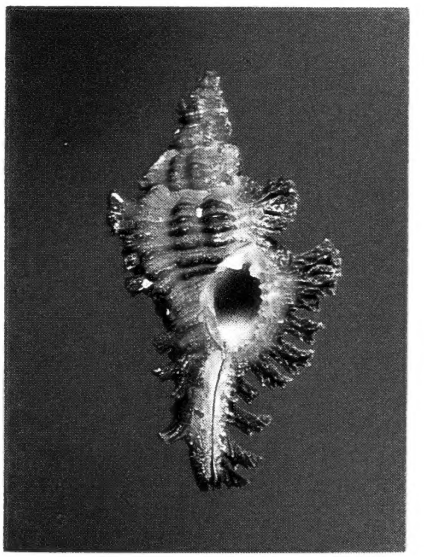
Chicoreus (*Chicomurex*) *turschi* Houart, 1981, Nautilus, 95(4):186, figs. 1-6. Paratype Houart collection 35.5 x 17.5 mm. Although superficially similar to *C. venustulus* Rehder and Wilson, 1975, this western Pacific form has a narrower, more elongate shell and a completely different protoconch, consisting of one and one-half bulbous whorls in contrast to the four, conical whorls of *C. venustulus*.



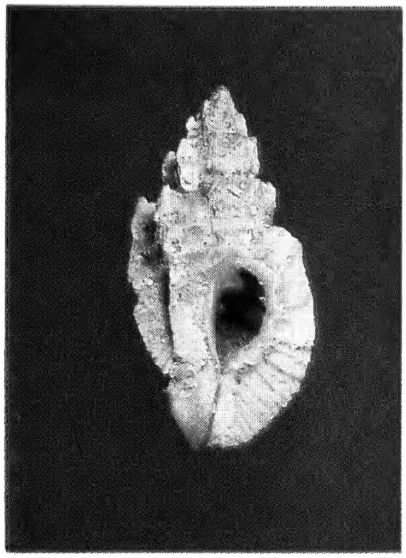
Homalocantha dovpeledi Houart, 1982, Soc. Belge Malac., Inf., Ser. 10(1-4):77, pl. 4, figs. 1-6. Paratype Houart collection 49 x 49 mm. This peculiar *Homalocantha* from the Red Sea is unlikely to be mistaken for any other species. The ornamentation consists of just two or three long palmate digitations on the varices of the body-whorl, instead of the four or five seen in *H. scorpio* (Linnaeus, 1758), the nearest related species.



Trophon purdyae Houart, 1983, Ann. Natal Mus., 25(2):449, figs. 1, 4-6. Paratype Houart collection 23.5 x 11.5 mm. Named from material trawled off the eastern coast of South Africa, this form bears a superficial resemblance to *Nucella wahlbergi* (Krauss, 1848) but has a trophonine operculum and radula. Nevertheless, it is a most atypical looking "*Trophon*", having only faint axial ribs instead of varices.

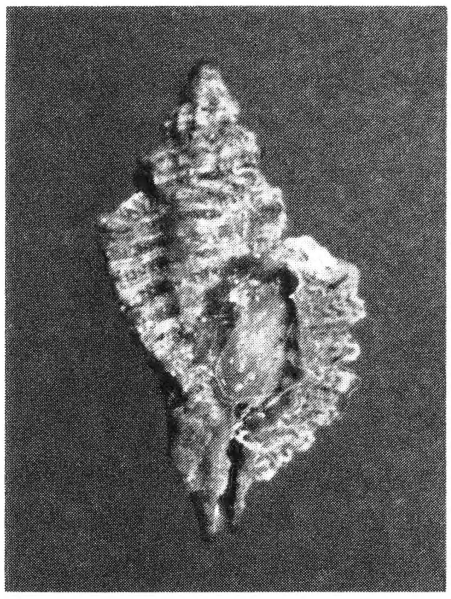


Chicoreus (*Chicoreus*) *paini* Houart, 1983, Venus, 42(1):28, pl. 1, figs. 3, 4; text figs. 1, 2. Paratype Houart collection 37.5 x 20.5 mm. Another of the small dark-brown species of Indo-Pacific *Chicoreus*, this new form was compared with the similar appearing species in the area and shown to be different in several details; but there is no single overwhelming distinction that may be stressed. At almost the exact same time, this form was also named as *C. kengaluae* by Muhlhausser and Alf 1983, p. 101, figs. 1, 2 but the latter was issued on July 1, 1983, and Houart's paper was issued June 30, 1983. That is cutting the degree of priority a bit fine but it is still valid.

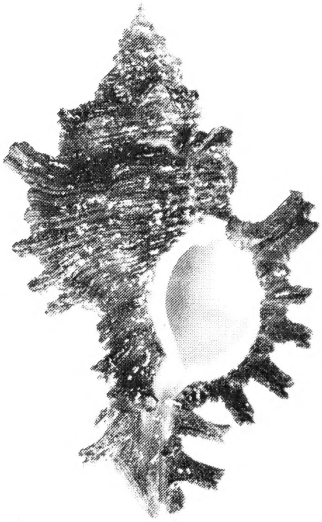


Favartia (*Favartia*) *paulboschi* Smythe & Houart, 1984, Soc. Belge Malac., Inf., Ser 12(1):5, pl. 2, figs. 1-5. Paratype Houart collection 17 x 9 mm. An attractive little shell confined to the coast of Oman, this species has some of the aspects of the subgenus *Pygmaepterys*, but the aperture is the small, rounded, nondenticulate type found in *Favartia s.s.*. The comparison with *Favartia peasei*, given by Smythe and Houart was actually being made with a species of *Favartia s.s.; F. peasei* is a good *Pygmaepterys*, as was discussed by Vokes (1984). There is no closely related form with which it may be compared.

Pygmaepterys philcloveri (Houart, 1984), (as *Pazinotus*) Soc. Belge Malac., Inf., Ser 12(2-3):128, figs. 1-3. [*Poirieria* (*Pazinotus*)]. Left: paratype Houart collection 13.1 x 7 mm; right: holotype MNHN 13.6 x 7.5 mm. One more of the myriad new and beautiful species being taken from the tangle nets of the Philippine Islands, this species is unmistakable and cannot be confused with any other related form. It has five or six winged varices and a strongly dentate aperture and bears only a familial resemblance to the other species with which it was originally compared. The cancellate shell surface created by the spiral cords and the axial growth lamellae indicates that the species is better placed in the genus *Pygmaepterys*.



Ocenebra isaacsi, 1984, Boll. Malacologico, 20(1-4):84, figs. 1-5, 8 (and 2 unnumbered text figs.). Paratype Houart collection 9.8 x 5.7 mm. Although *O. isaacsi* does not apparently ever seal the siphonal canal, in all other respects it is a good *Ocenebra s.s.*



Chicoreus (*Chicoreus*) *dovi*, 1984, Venus, 43(1):55, pl. 1, figs. 1-3; text figs. 1, 1A, 3. Another of the large brown *Chicoreus* group, this shell has a strong similarity to *C. torrefactus* (Sowerby) but differs in details of the protoconch and aperture. It is confined to the East African area of Somalia to Kenya.

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Vokes, E.H. 1984. On the identity of "*Murex*" *peasei* Tryon, and its generic placement. Shells and Sea Life 16(10):160-161, figs. 1-4.

* * *

CURRENT EVENTS Schedule of Shows & Conventions

1985

Conchologists of America Philadelphia, Pennsylvania, June 22-26

Third International Congress of Systematic and Evolutionary Biology University of Sussex. United Kingdom, July 4 - 10

Second International Cephalopod Symposium, Tubingen, Federal Republic of Germany, July 16 - 23

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Second International Phycological Congress Copenhagen, Denmark, August 4 - 10

Western Society of Malacologists Santa Barbara, California, August 18-21

The Wetlands Institute & Museum Fall Nature Show Stone Harbor, New Jersey, September 21 - 22

Oregon Shell Show Portland, Oregon, September 21 - 29

Geological Society of America National Convention, Orlando, Florida, October, 1985

Crown Point Shell Collectors Study Group Shell Show Southlake Mall, Merrillville, Indiana, October 4 - 6

American Littoral Society 24th Annual Meeting Florida West Coast, October 10 - 14

West Coast Shell Show Santa Barbara, California October 12 - 13

North Carolina Shell Show Wilmington, North Carolina, October 26 - 27

Western Society of Naturalists Monterey, California, December 27 - 30

1986

2nd International Symposium on Indo-Pacific Marine Biology Guam, Truk & Ponape, Sponsored by the Western Society of Naturalists, June 22 - July 9

American Malacological Union - Western Society of Malacologists Joint Meeting, Monterey, California, July 2-7

Midwest Regional Shell Show in Indianapolis will not be held this year. The sponsoring club, the Indianapolis Shell Club has voted to make the show a once every two year's affair beginning in 1986.

Gulf Coast Shell Club Shell Show in Panama City, Florida, may be held again this year during the third weekend of October (19th & 20th). More definitive details will follow later.

We have heard that the COA convention for 1986 will be held in Fort Lauderdale, Florida, in 1986. We will provide more details as we get them.

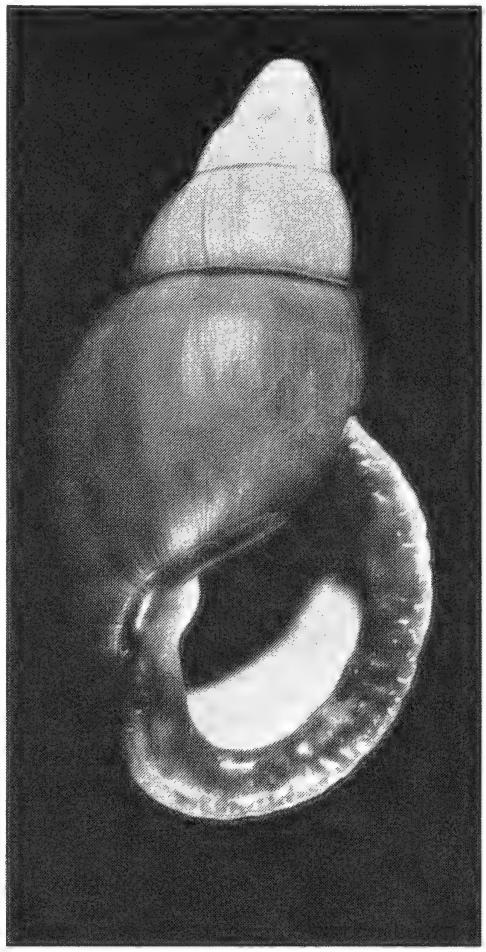
If we have missed a show or convention that you are aware of please excuse us, and send the information. We would especially like to hear of overseas shows and meetings. Thanks to Donald Dan for keeping us informed of many of these dates.

Orthalicus labeo — the rarest land shell?

Richard L. Goldberg, Worldwide Specimen Shells,
P.O. Box 137, Fresh Meadows, NY 11365

As we all know, a species' rarity is usually due to its locality and habitat not being known, or it being inaccessible (we are not including species becoming rare by extinction). Such is the case with the decidedly rare *Orthalicus* (*Metorthalicus*) *labeo* (Broderip, 1828), from Peru.

Orthalicus (Metorthalicus) labeo (Broderip, 1828) from Moyabama area, Andes, Peru; 67 mm length; in the collection of Bruce Einsohn



This large and spectacular species, often referred to as the "Blubber-lipped Bulimulus," was known from only a handful of specimens until the late 1950's. It was originally found by Lt. May, on Christmas day of 1827, during his historic journey down the Amazon river from its source to the sea. While at a farm-house at Toulea, (about 9 leagues) east of Chachapogas, Peru, at approximately 8,000 feet above sea level, he obtained the first specimen of *O. labeo*, and others were frequently seen by him. Because of some unfortunate circumstances, only one specimen reached Europe and was deposited in the museum of the Zoological Society of London. It later disappeared.

During the period that followed until the late 1950's, very few were found and brought to light. In 1947 though, Colonel H. Burrington-Brown obtained a number of specimens at Chachapogas-Moyambamba district, which were given to T. Pain of London (personal communication). The snails were found crawling among the roots of trees after rain. Local natives, it is said, used these snails as a food source. Later, a number of specimens were obtained by George Jacobs of New York City. I have personally seen these 6 specimens, which are now in the collection of the American Museum of Natural History.

A unique feature of this species is the unusually thickened and pitted outer lip. In most specimens I have seen it is reddish in color. It obtains a maximum size of 3 inches. Fresh-taken specimens have a variable olive-green periostracum on the lower half of the body whorl.

Very few specimens reside in private collections, and relatively few can be found in major museum collections. I know of specimens in the British Museum, American Museum, Philadelphia Academy of Natural Sciences, and the Delaware Museum of Natural History.

In my efforts to obtain land shells from Peru, my contacts have not been able to find this species. I know of no specimens collected since the early 1960's. This is probably due to the unrest and politically subversive movements in these remote areas of Peru. The species is only known from this limited area, and no one is willing to venture into these areas.

Orthalicus labeo has been considered rare because of its inaccessible habitat, but now might fall into the category of one of the rarist land shells because of a man made situation. I have been so enamored by this shell that I incorporated it as one of the logo shells for my shell business. I think you will agree that its unusual beauty and size along with its rarity, make *Orthalicus labeo* one of the more appealing terrestrial mollusks!

* * *

READER FORUM

A few good investments.... All of us have had the experience of buying a very expensive species only to see the price plummet in subsequent months. While shell prices are for the most part beyond the customer's control, there are a few good investments to be had on today's market. In particular, the following four categories are worth exploring to the fullest:

1) Dredged material from the Gulf of Mexico-Caribbean: At one time, the dredges were dredging off Cape San Blas and other prime areas, yielding species such as *Epitonium pernobilis, Latiaxis dalli*, and *Murex atlantis.* Now, all is silent and the aforementioned shells are virtually never listed by dealers. Only the occasional purchase of an old collection will yield such treasures as *Murex beauii* (webbed varices), *Cochlespira elegans*, and *Poirieria actinophora.* Thus, if you are offered any

or all of the above, don't hesitate, as these are bound to increase in value rather dramatically over the next few years.

2) Galapagos Island Material: Galapagos shells have been difficult to obtain for some time now. About the only way they can be procured is via an old collection, and how many of those are there? Dealers rarely have *Epitonium turbinum, Cancellaria gladiator*, and *Lyropecten magnifica* nowadays, so it will pay off in the long run to take advantage of any Galapagos species that are offered. What is common to uncommon today may be impossible to obtain tomorrow. Don't wait!

3) Cold water whelks and trophons are the "sleepers" of the shell world. Often neglected because of their lack of color, they offer exquisite sculpture and marvelously intriguing shapes to the inquisitive collector. Suprisingly, such genera as *Colus, Buccinum and Boreotrophon* are much harder to complete than *Cymatium, Strombus and Xenophora.* Anytime a dealer offers a good selection of cold water material, get as many species as you can afford. Whelks and trophons are hardly ever listed and are not likely to become more common in the future.

4) Japanese shells: Very few people besides dealers realize that it is extremely difficult to obtain choice Japanese rarities. They are usually available in dribbles and drabbles; one or two of this, three or four of that. When was the last time *Amaea secunda* was listed? How about *Latiaxis kiranus*? Rarely, if ever, has a Japanese species gone down in value over time, unlike some Philippine shells which have fallen in price in recent years.

Speaking of Philippine shells, here are a few poor investments on today's market: 1) Live-taken South African material (prices are plummeting and there appears to be no end in sight!). 2) Caribbean cones (most are relatively common within their often very limited range. Prices are high because there are few good suppliers in the Caribbean at present). 3) Philippine cowries (prices fluctuate too much and formerly rare species have become more common).

Certainly, no one can predict with complete accuracy what the future will bring to the shelling stock market. However, the four categories I've outlined are near foolproof for lasting value in shells. Good luck in all your upcoming investments, and may the next *Epitonium turbinum* be yours! — **David DeLucia**, 7 Sunset Hill Drive, Branford, CT 06405

Seashell Decor — Ideas for all decor

Faye Frost 195 Eagle Lane, Sedona, AZ 86336

What to do with those sea treasures gathered through the years? These beauties of nature need to be seen and admired. Often they recall rich memories of places visited and spots enjoyed, so let's bring them out.

Space is the most important feature of any display. It rests the eyes from the visual fragmentations of life. It lends a feeling of relaxation and tranquility. It accentuates the objects within it. Have you noticed early Oriental paintings with many, misty spaces open to imagination? Those artists knew the secret of "less is more."

"But there are so many shells to show," we wail. One solution: use just part of your collection at a time. This may be difficult, but rewarding. So let's clear the area of all not-essentials, abolish clutter, and concentrate on valuable, workable space. A dramatic way to achieve this is by eliminating table and floor lamps. It opens exciting possibilities. Sell the articles you truly can spare or donate them to some organization. What about those objects of sentimental worth accumulated through the years? Put them in a special box to bring out on occasion. This gives even more enjoyment than a constant viewing.

Dark wood or walls delineate light-colored shells with the reverse true for somber-shaded ones. Glass-topped coffee tables offer a multiple use with drawers for pull-out showing. As a background in drawers try pastel colors — for instance, blue-greens or sand-beige to give the feel of sea and shore. An occasional black backing can intensify that alabaster beauty. Monochromatic colors satisfy, like white capiz shell chimes against a light wall.

Baby's oil enhances the lustre of specimen shells — indeed, most shells love it. Use a small paint brush for this and wipe off the excess oil. Keep shells out of the sun for it bleaches them. Because seashells blend well, you can interspers them with other art objects.

Provide plenty of shelves — so desirable for places to put things. On these shelves aim for occult balance. As an example, use one or two tall shells to the left and a group of smaller ones to the right. Asymmetry intrigues. Vary the heights by using wood, bamboo, or clear acrylic stands. pile oyster clusters on each other for added lift. It's pleasing to group similar shells: glossy ones, those with color, or those that have been buffed to a pearly nacre. Massed effects can lend

impact to your display. Vary this with an individual favorite surrounded by, again, that precious matting of space.

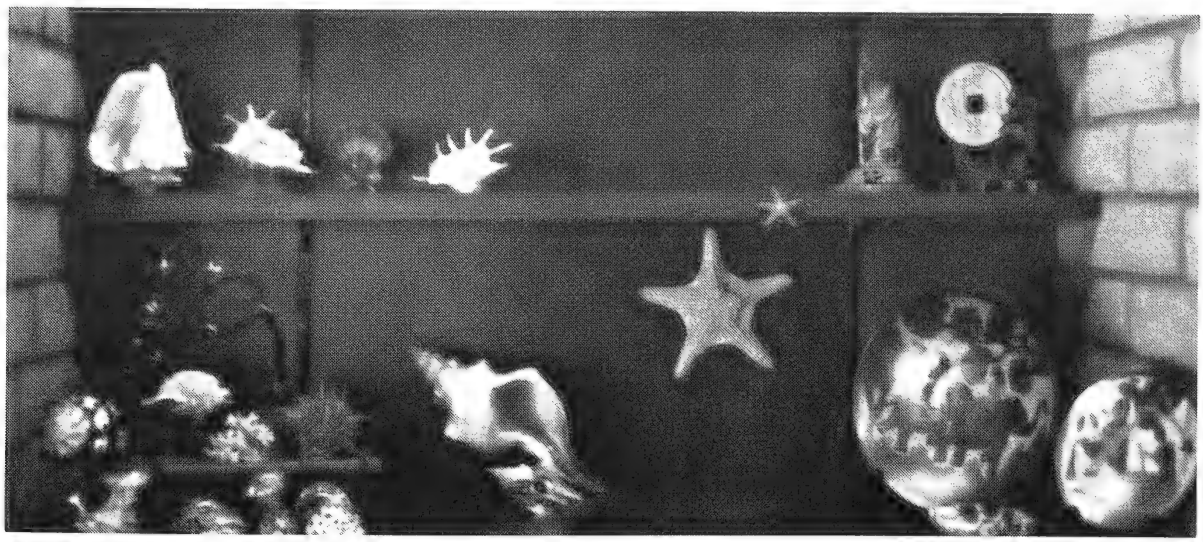
Larger and darker shells take a lower placement in your structures while the smaller and lighter-hued ones can be raised on natural wood pieces or glued to a graceful branch. Link a shell cluster to a picture with the pointing rhythm of twigs. Shells and driftwood favor each other.

Glue shell arrangements on strips or pieces of plexiglass slipped into wood moulding, top and bottom. Paint this moulding to match the wall color. Stretch burlap over an oblong board and glue shells onto this in your own designs. Or sprinkle sand on an interesting weathered plank smeared with paste, then create your own unique patterns using shells.

Shell-border a mirror for enhancement. An oiled manzanita bough swirls tiny bivalves like butterflies. Place this in a rock with a hole and you have an artistic whole. Trays make effective containers for shells with the feature of easy mobility. A wicker-fish tray joyfully holds a multitude of miniatures.

For a conventional center piece, cover a large coral with tiny shell gems. A wee black one here and there sparkles the effect. Dainty favorites grace little box tops with a larger one centered on the lid to provide a handy lift. For a daily delight, on a wall where you work, glue a shell mural with tile mastic. Spray it with clear lacquer for a fine finish that needs only occasional feather dusting. A fish bowl holds an array of shell beauties.

Again, aim for simplicity. Use your shells in all rooms and spill them into your garage. The garage? Yes, for this often is the most popular entrance. Why not beautify it also? Try wall-to-wall shelving with equal-sized large and sturdy cardboard boxes below, painted to match the wall color. Gaining storage space, these boxes are handy to pull out when necessary. The subtle, spaced arrangements of your treasures over the entire house will charm you and your friends.



PUBLICATION NOTES

Aubry, Umberto 1984. Terebridae (Mollusca: Gastropoda). published by the author. 48 p.; 15 color pls.; Softbound. — Order No. 806 $14.95

This work is essentially a color catalog of the species of Terebridae in the private collection of the author. Illustrated are 4 fossil and nearly 200 living species, though 8 deep water Philippine specimens are without specific names. Provided are generic and specific designations, with author and date, for each taxon illustrated; size of specimen, locality, depth, and the author's estimate of rarity are included. The color photos are generally of good quality, although some are so small or so dark as to make identification difficult. There is unfortunately no descriptive text to accompany the illustrations. The detailed list of references will be of use to those interested in these marine mollusks, and and index will allow the reader to locate a particular species, especially as there appears to be no reason for the order in which the species are grouped on the plates.

Although acknowledged by the author not to be a scientific study, this book is the only popular treatment devoted entirely to this family. Until the projected monograph by Cernohorsky and Bratcher is published, this small color catalog will be available to introduce collectors to these mollusks. — Walter E. Sage, III

Rolan Mosquera, Emilio. ?1983. Moluscos de la Ria de Vigo. Santiago de Compostela, Spain, 283 p., index; 435 species illustrated in halftones; maps. — Order No. 1001 $50.00

Emilio Rolan has produced an exhaustive monograph on the mollusks of the estuary on the western coast of Spain. Ria de la Vigo yielded 435 species of mollusk. All are figured with good black & white photos with notes on habitat, synonymy and bibliography. Large type in Spanish. Locality maps. — S&SL

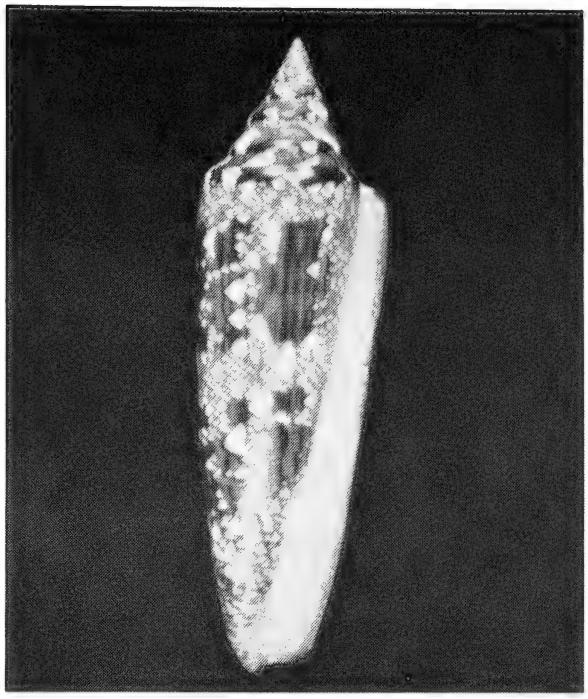
Thompson, T.E. & G.H. Brown 1984. Biology of Opisthobranch Molluscs Volume II. The Ray Society, 229 p.; 12 map pages; 40 figs. + unnumbered figs.; 41 plts. (35 in color). — Order No. 784 $49.95

Beautiful companion volume to the 1976 volume which covered all opisthobranch groups except Nudibranchia. This volume includes 108 species of nudibranchs in four suborders. This is a large format book with beautiful color plates of the color drawings. It completes the description of the British Opisthobranchia begun with volume I and is fine in every detail. Even if you are fortunate enough to own the original Ray Society opisthobranch publication (Alder & Hancock 1841-1845 and Eliot supplement) you will have to have this set. — S&SL

Bulletin of the Institute of Malacology Tokyo. October 30, 1984. Volume 2, Number 1, pages 1-18, pls. 1-8. — Order No. 956 $10.00

Articles by Ranji Tiba, Sadao Kosuge and Victor Dan including description of a new species of Buccinum from Japan, new names for Buccinum, new species of Calliostoma and Lyria along with illustrations of Philippine cones. Excellent black & white illustrations of about 30 species of cone shells. — S&SL

PERSONAL NOTES



Winner Mr. S.S. Forrest of Lubbock, Texas won this 104 mm *Conus bengalensis* in the free shell drawing sponsored by Tom Shepherd (see December issue S&SL). The shell was trawled at 125 m depth in the Andaman Sea. The winner was chosen by Tom's two year old granddaughter picking the lucky address label.

Common Names List: As long as I have you, let me comment on your recent inclusion of the Scientific-Common Name List in your magazine. As an old subscriber to **Of Sea and Shore** I used to hate when those precious pages were taken up with long, dull lists (*i.e.*, all the taxa, all the shell stamps, etc.) I thought so here too, but wound up changing my mind for the wrong reason. My education as a zoologist left me truly believing that common names are rather useless on a scientific basis, but talking to amateur shellers (like myself) convinced me moreso. Different people use different names for the same shells, and after seeing all those common names I figure it would probably be as easy to just learn the Latin! I liked the list and now keep it with my reference books for a better reason. For someone who does a lot of trading (and some selling) of shells I found it great to have a concise listing of all the Latin names by taxa, especially with authors and dates. Now this is useful! I also applaud you're putting it mostly in one issue. No having to sort through five or six volumes to find the *Conus* or the *Venus*, for example. So, not much for reading pleasure there, but nice to have nevertheless. Thanks and wishes for continued success. — Steve Rosenthal, 4636 Arrowhead Dr., Apex, NC 27502.

Field Note Book: In Susan Hewitt's article on the Field Note Book the most important thing is not said. The notes on collecting in the book and the labels on the specimens must have **one-and-the-same** number! I know, because I did not do that, and now I have my difficulties.... — Dr. Eveline Marcus, Caixa Postal 6994, Sao Paulo, Brazil 00151

Melbourne Carriker retires from the University of Delaware this year. A symposium honoring his talents was held on February 7, 1985 at the College of Marine Studies. Mel is president of the American Malacological Union for 1985-1986.

Freshwater clams Al & Ann Becker are interested in chitons and freshwater mollusks. They have written articles for **Of Sea and Shore** and have gathered a lot of information on freshwater claming and the pearl button industry. — Al & Ann Becker, 2157 Sunrise Drive, La Crosse, WI 54601.

Glory of the Sea Museum First we would be willing to write of our experiences with sea shells, tree and land shells, sweetwater shells, and fossil shells, including sea life, etc., for your magazine. We have traded with over 1500 shell collectors and museums of the world including the great museums of Europe and the United States. We have led to the finding of the habitat of the great golden cowrie, reddish form, also the habitat of the cone, glory of the seas, and the 24" to 30" *Penna nobilis* of Malta, in the Mediterranean Sea. Many years we have shelled among the San Blas Indians, on islands off the Panama coast, where they ate the sea shell animals and fish entirely and all raw. Helped cut off the legs of octopus (who live on land & in the sea both). They grow their legs back on in less than a year. — Fred F. Glancy, Glory of the Sea Museum, R.R. #2, Hartford City, IN 47348.

Jerry Landye has been working for the Arizona Game and Fish Department for quite a few months and travelling around Arizona. He is still collecting information on inland mollusks as he travels.

Qatar Shells If you are still interested in having some short articles / field observations of local molluscan fauna I would be happy to oblige. Approximately 150 species have so far been identified with many "unknowns" still waiting. I never really know where to send the unidentified material as they are inevitably single samples and there is no competent authority in the area. I would appreciate any assistance on this subject as certainly there is good interest here in marine life. I have been lucky enough to get 2 TV programs and newspaper and magazine coverage locally so maybe there will be support for an "Arabian Malacological Society" in the future? [We would like short articles, especially with photos] — T. Woodward, c/o Nasir Bin Khalid & Sons, P.O. Box 82, Doha, Qatar

Super Clam?

Roland Anderson, The Seattle Aquarium, Pier 59, Seattle, WA 98101

The west coast of North America is reported to have the most diverse population of sea stars in the world (Fisher, 1911), including the world's largest, the Sunflower Star, *Pycnopodia helianthoides*, which can have a radius larger than 400 mm (Lambert, 1981). In this hodge-podge of predatory, clam-hungry sea stars lives a large clam that defies most sea stars and manages to have few natural enemies. This is not surprising in itself; other clams, such as the geoduck, have few predators, although the geoduck escapes predation by burrowing up to a meter deep into the substrate. Kennerley's Venus, *Humilaria kennerleyi* (Reeve, 1863), does not bother to dig or burrow into the substrate like other clams; it merely lies on the sea floor and thumbs its nose at normal clam predators.

Kennerley's Venus is found on gravel bottoms in moderate current areas from Alaska to California. It grows to about 10 cm in length and has an oval shell with sharp concentric ridges. The shell is gray and has a texture akin to cement. It somewhat resembles the Butter Clam *Saxidomus giganteus*, with which it cohabits, but the fact that its shell closes tightly distinguishes it; the Butter Clam is a "gaper." The shell also has a crennulated edge while the edge of the Butter Clam's shell is smooth. Although reported to be a collector's item, (Abbott, 1974), divers at The Seattle Aquarium commonly find it in local waters of Puget Sound. The fact that it is strictly subtidal may lead to its rareness in shell collections.

Studies have found that the only sea star to effectively prey upon Kennerley's Venus is the Long-Armed Sea Star, *Orthasterias koehleri*, which opens the clam by pulling on the margins of the shell with its tube feet until small pieces of the chalky shell chip off (Mauzey, *et al*, 1968). By continuing to do this, the sea star eventually makes an opening into the clam large enough to insert its stomach and digest the clam. Only a very small opening need be made, as sea stars can insert their stomachs into openings less than a millimeter wide (Feder, 1955).

At The Seattle Aquarium the Mottled Sea Star, *Evasterias troschelii*, also has been able to open this hardy clam by pulling off bits of shell. The Mottled Sea Star can maintain a pull of up to 4500 gms on a clam, for a period of up to six hours or more (Christianson, 1957).

The large Oregon Triton Snail, *Fusitriton oregonensis*, is able to attack and eat Kennerley's Venus but has to resort to stealth

in order to do it. This snail sneaks up on the clam, places its slender proboscis between the shells while the clam is feeding/breathing, and injects an anesthetic into the clam's mantle, which relaxes the muscles holding the clam together. The snail then feeds on the clam's tasty inner tissues at its leisure (Eaton, 1972).

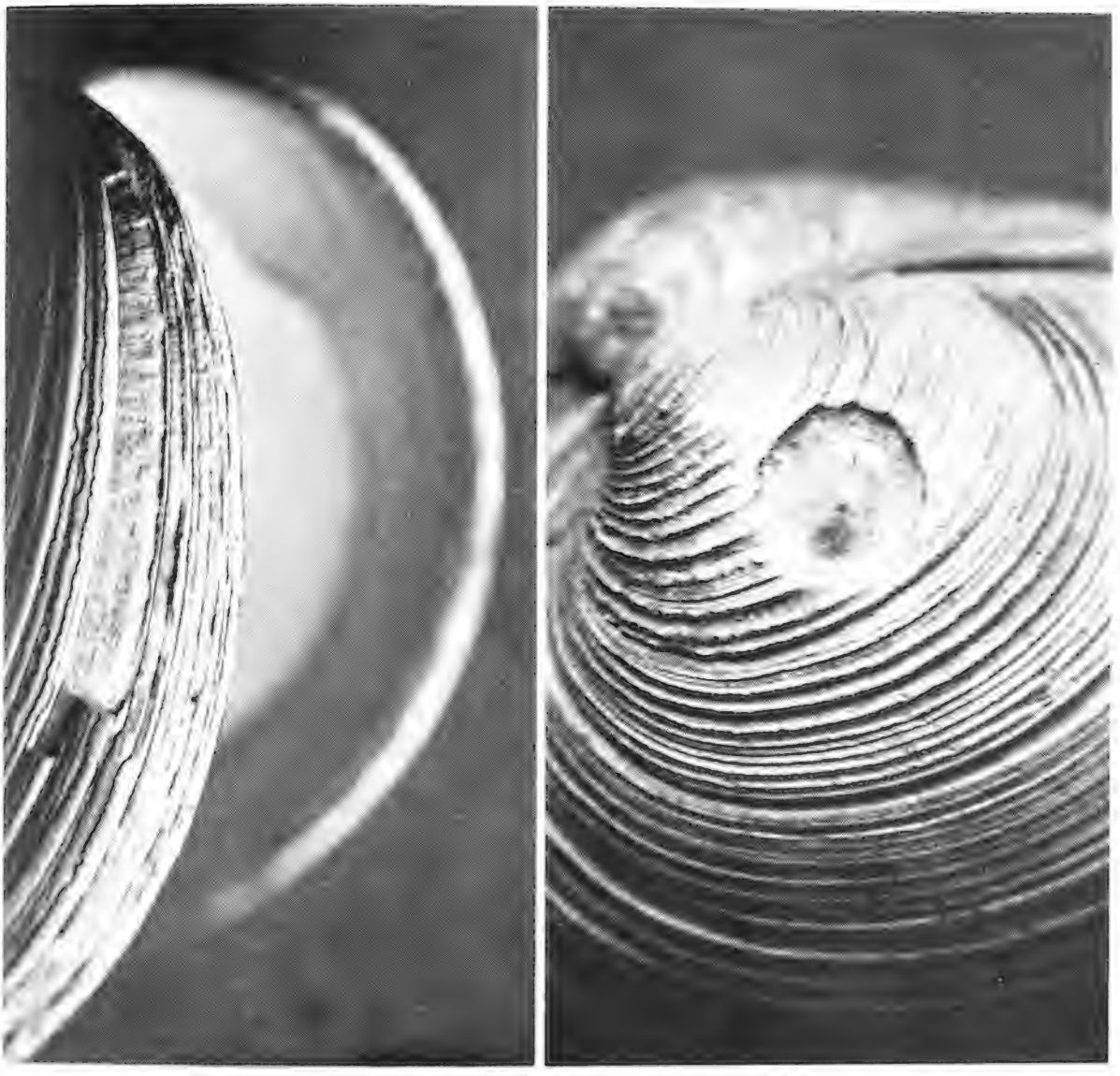
Other predators that typically prey on clams by drilling have been found to be unable to bore through the thick rough shell of Kennerley's Venus. This clam's shell is about 5 mm thick, while a Butter Clam of comparable size will have a shell half that thickness. Experiments at The Aquarium have shown that normal clam drillers such as the Moon Snail, *Polinices lewisii*, or the Dog Whelk, *Nucella lamellosa*, will try to drill into the clam but are unable to penetrate the shell, in attempts lasting up to a week.

Octopuses have a rasping tongue which they use to drill through normal clams' shells in order to inject a paralysing venom. One study found that Kennerley's Venus was 0.7% of the food-item shells found in the middens of the giant Pacific octopus dens that were studied (Hartwick, *et al*, 1981). This particular study does not report seeing octopus actively feeding on Kennerley's Venus, nor do they report if the shells had been drilled by the octopus. Experiments at The Aquarium have shown that octopus will attempt to drill through Kennerley's Venus as it does other tight-shelled clams, but the octopus never have been able to drill completely through the shell of this "super clam," and after several presentations of this clam the octopus ignored it, apparently recognizing it as being a clam that it cannot open.

It must be noted that the octopus used in this experiment at The Aquarium was relatively small for its species, only 7.5 kg; the giant Pacific octopus may weigh over 40 kg. It is the experience of The Aquarium that larger octopus disdain smaller clams and rarely drill larger clams, preferring to pull them apart by brute force, of which they have a considerable amount. It is still felt that Kennerley's Venus would withstand even a large octopus's efforts to open it.

In the field, Aquarium divers have frequently seen a large Sunflower Star digging a hole in the sand while pursuing a burrowing clam, with 3 or 4 Kennerley's Venuses sitting at the ends of its rays. It has been found that the Sunflower Star will take this clam into its body in an attempt to digest it, but will "spit" it out unharmed several days later (Mauzey, *et al*, 1968). The clams at the edge of the digging sea star most likely were the "Jonahs" of this clam predator.

The author of one book on shells has suggsted that Kennerley's Venus might be an untapped source for harvesting (White, 1976). They are fairly common and just lie on the bottom, waiting to be dredged up. However, the author has tried eating it, and reports that a chisel is needed to open it uncooked, and if steamed, it has a fine, typically clammy taste but also has the texture of a rubber tire, complete with nylon belts. Given these considerations, it is not likely our "super clam" will ever be harvested.



Left Photo: Detail of chipped *Humilaria* shell opened by a sea star. Right Photo: Unsuccessful drilling hole by moon snail into *Humilaria*. Photos by Buzz Shaw of The Seattle Aquarium.

At The Seattle Aquarium, Kennerley's Venus has proven to be remarkably hardy. It has been kept in open-system tanks for months at a time with no special care or feeding. The sharp ridges on the thick heavy shell, and its resistance to breaking make it particularly amenable to hands-on demonstrations. It is frequently used in The Aquarium's Touch Tank, where it is as highly resistant to handling by humans as it is to other predators.

Unsuccessful drilling hole by *Octopus dofleini* into *Humilaria* shell. Photo by Buzz Shaw of The Seattle Aquarium.

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ON THE REEF: Pyrene & Vexillum

Bob Purtymun, P.O. Box 643, West Point, CA 95255

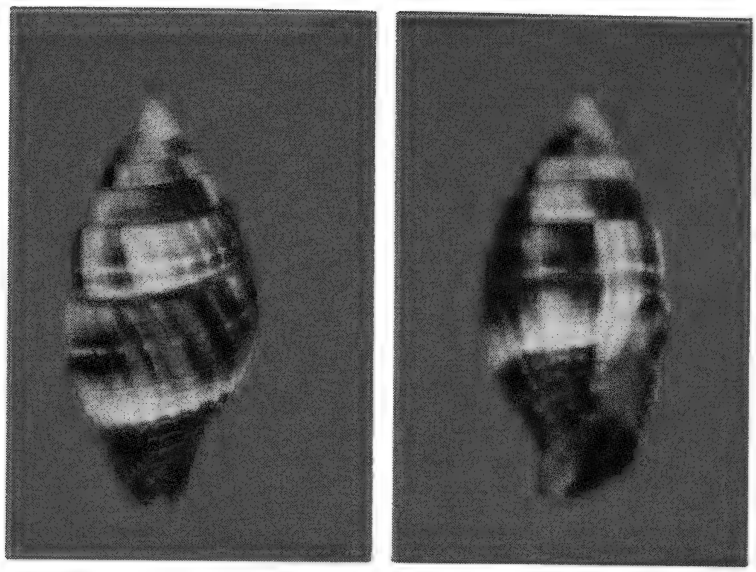

Photo: *Vexillum millecostatum*

On December 9, 1983, I was on the Divemaster, a 65 foot charter boat out of Townsville, Queensland, Australia. We were at a most uncomfortable anchorage in the lee of Coil Reef on the outer edge of the Great Barrier Reef. The South Easterlies had been kicking up for several days, and choppy waves from the Coral Sea rolled over the submerged reef making the boat pitch and roll uncontrollably. It was a relief to get diving gear on and get into the water.

Twenty meters below I drifted down in the calm clear water to a pile of dead antler coral rubble. Obviously it had been broken off the upper reef in previous storms, and had been piled up in this little under water valley by wave and current action. Here was an excellent place to llok for shells. However, care must be exercised as the small shells drop through cracks and crevices to be lost forever.

In the upper layers I found several *Pyrene* (*Columbella*) *turturina* (Lamarck, 1822) clinging to the branches as I slowly picked into the pile. Then there it was gleaming yellow and black through the branches. I pulled off my gloves, for I had lost just such a shell in Faga'alu Bay on Tutuila Island, American Samoa in a similar habitat. Carefully I removed a few branches and grasped my prize. It was the elusive *Vexillum* (*Pusia*) *millecostatum* (Broderip, 1838). Very few shell books include pictures of this shell, and it is seldom featured on price lists. Synonyms are: *adamsoni* (Reeve, 1844) and *evelynae* Melvill, 1895.

What color is Platydoris? A matter of light and depth

Text by **David W. Behrens** Route 1, Box 70-A, Templeton, CA 93465
Photograph by **Jim Vallee**

Platydoris macfarlandi Hanna, 1951 on left side of whitish sponge. *Archidoris montereyensis* is on lower right in photo. Collected October 7, 1981, by R. Fay & J. Vallee, Redondo Canyon, California. Photographed onboard ship by Jim Vallee.

The rare deepwater cryptobranch dorid nudibranch *Platydoris macfarlandi* Hanna, 1951 is known from only two collections: the original collection of three specimens off Pismo Beach, California in 1950 and the collection of two large specimens off Redondo Beach in 1981. The later specimens provided material for a redescription of the species by Behrens & Henderson, 1983 (Veliger 25(4):365-369). The redescription was provided to broaden the understanding of this little-known species, which was originally described on external characteristics only.

The animal is typically doridiform with undulating, flexible margins. The surface of the notum appears velvety and smooth

until examined closely. It is actually covered with minute, closely set villiform papillae. A complete anatomical description can be found in Behrens & Henderson (1983). The largest discrepancy between the original description and the later pair of specimens was the color. The original description reads "deep dark red above when alive, fading to a dull vinaceous grey in alcohol; light grey, almost white below." The 1981 specimens were a uniform pink above with a thin white to very pink line along the margin of the notum. The body cavity produced a slightly darker area dorsomedially. This color regime can be seen in the accompanying photograph by Dr. Jim Vallee, taken of the live specimen soon after removal from the trawl net.

The color of dorid nudibranchs has been described by many authors to be an important ecological feature by providing the animal protection through camouflage. Many dorids match their prey substrate, usually a species of sponge, both in color and texture. Of the sponges collected in the 1981 samples, none matched the *Platydoris*, although many were cream to white. Although we cannot be sure that any of these were indeed the prey species of *Platydoris* it brings up a question of the importance of color underwater when you are a deep-dwelling species. At the depth that *Platydoris* lives, 100-300 feet, are the colors of pink and white preceptively different? Light and its color components are known to attenuate rapidly with increasing depth in seawater. Recent data indicates that red light would be lost by a depth of 45 feet, leaving only green light existing at the depth where our specimens were trawled. If this is in fact true, a pink nudibranch would appear white, and therefore similar to its substrate at this depth, regardless of its color at the surface. Assuming that predators can see color, a color, which at the surface is highly conspicuous would be indistinguishable at 100 feet. Similarly, the incandescent flash from a scuba divers strobe can throw light wavelengths foreign at that depth on the subtidal seascape, therefore providing us with a biased image. As nature lovers and biologists we must be aware that under natural conditions certain features, such as light and color, may not be as they appear to us, the human animal. Even underwater photography may cast an inaccurate impression. Therefore, when discussing and reporting ecological observations and considerations we must keep this in mind, and attempt not to allow our situation and surroundings to prejudice our conclusions.

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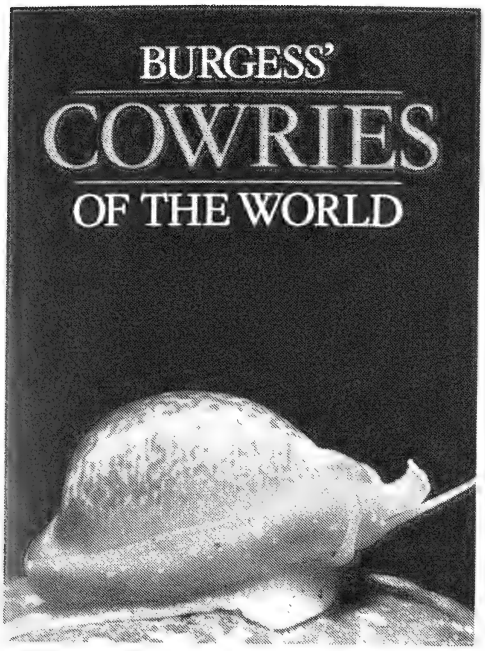

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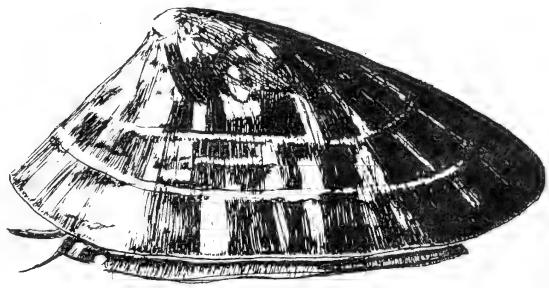
IN THIS ISSUE

Plate Limpet

Notoacmaea scutum



Chris Selin

Living Clocksprings, part 1.

Chris Illert,
2 Tern Place, Semaphore Park, South Australia 5019

As early as 1890 Francois reported that *Murex fortispinna* possessed a special "tooth" on the margin of its aperture apparently for the purpose of insertion between the valves of *Arca*. This seems to be the first reference in western scientific literature to gastropod shells functioning as "can-openers". Although many snails use their shells to pry cockles open, it just had not been noticed.

A stout apertural "tooth" may likewise be found in the west Mexican genus *Acanthina* (e.g. *A. tyrianthina*, Berry,1957) and also in the China/Korea/Japan faunas (e.g. *Ceratostoma burnetti*, Adams & Reeve 1849). So gastropods all round the world have independently developed this feature.

But, even without special spikes, the aperture of the gastropod shell can still be used as a tool in the procurement of food. One of the earliest accounts is that of Harold Sellers Colton in 1908. He studied various oyster-eating whelks and noted the way that they rotate their shell axis by contracting their columellar muscle. With their foot attached to one valve, and their shell aperture wedged firmly in the bivalve commissure-line, it is only a matter of time before the whelk overcomes its victims to obtain a meal. A recent study of European whelks *Buccinum*, by C. Nielsen (1976), found that the forces involved were sufficient to actually tear the adductor muscles of a small *Venus*.

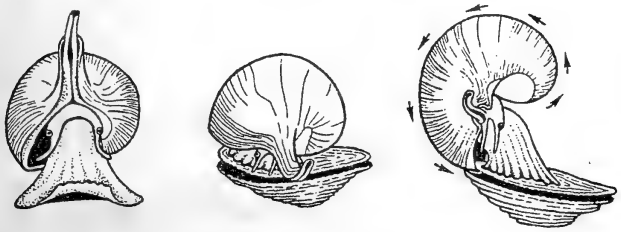


Figure 1. *The whelk Busycon using its shell as a tensile spring in order to pry an oyster apart (after H.S. Colton 1908).*

Another interesting example of a gastropod that uses its shell as a tensile spring, to pry bivalves apart, is the South Australian murex *Pterynotus triformis* (Reeve 1845). In two recent articles, published in Of Sea & Shore, I revealed how this mollusc uses its disaligned triradiate orthostichy of apertural flares as a tensile pyramid. Initially the fourth apertural flare (numbered from the current shell aperture back toward the apex) is inserted between the cockleshell valves rather like a can-opener. The groove between the first and fourth flares holds one valve, like the jaws of a vise, whilst the gastropod's foot (and sometimes its operculum) pushes the other valve away - as in Figure 2 (below).

Obviously triformis murexes cannot feed in this fashion during a period of shell-growth. Perhaps because of this shell-growth is infrequent but very rapid, with an entire 120 degree segment being added in just a few weeks. My aquarium studies were able to document the growth of two consecutive segments, on the same murex shell, over a period of years, and the creature only fed when whole segments had been completed.

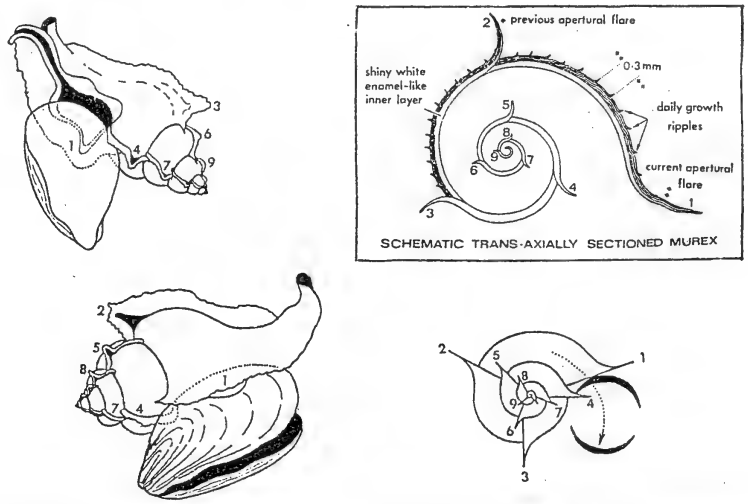


Figure 2. *A South Australian triformis murex using its shell flares to hold one cockle valve, whilst its soft foot pushes the other away. It attacks opposite the bivalve hinge for maximum leverage (after C. Illert 1980).*

EDITOR'S NOTES

Dear Friends:

We apologize for falling behind in publication. During October, November, and December, Sally and I (with some outside help) will be sending you seven issues, including this one. Every subscription will be honored until the S&SL publication date matches the calendar month. All will have the very latest news and articles on our favorite subjects.

This has been a very exciting year for Sally and I. We built a major addition to the house in Phoenix only to find that it still wasn't large enough for the expanding business and family needs. This has led us back to Bayside, California — 275 miles north of San Francisco in Redwood country overlooking Humboldt Bay. We have moved 40,000 pounds of books, magazines, and personal belongings and set up our operations here in our house. After painting the house outside, printing and mailing the Western Society of Malacologists Annual Report, installing a 165 foot sewer-line, and mailing the May issue of **Shells and Sea Life**, we are ready to start catching up on magazine issues.

The high cost of producing this publication has caused us to make some additional changes in format with this issue. These changes have been made only after careful consideration of all available alternatives. Our goal has always been to provide information to our readers. This format will allow us to continue publication and even to grow. The alternative is to cease publication entirely.

We have been losing literally thousands of dollars each month on the production of **SHELLS and SEA LIFE** for seventeen months now. Each copy costs more to print and mail than the subscription rate recovers. Even reducing the format size and increasing the subscription rates helped only marginally. Few people realize that one square inch of full color in the magazine costs about $1,000.00 to produce. Additional color gets less expensive per square inch but the minimum cost is unavoidable. Book sales and our personal savings have been subsidizing each issue heavily but this cannot continue.

We have also provided all of the **Of Sea and Shore** subscribers and advertisers with free subscriptions and ads to replace what they would have lost when Tom discontinued publication. This amounted to well over $35,000.00 in lost subscription and advertising revenue. We did this so that no one could say they "lost" their money and to dispell any possible fears about our stability. The **Opisthobranch Newsletter** was not nearly as involved or expensive as **Shells and Sea Life** but I was able to keep on a regular monthly printing cycle for most of those years. **Shells and Sea Life** will catch up and continue for years to come.

Shells and Sea Life is in its 17th year of monthly publication and we believe that there is a need for a **MONTHLY** publication on mollusks and marine life which reaches everywhere in the world. Reducing the physical size of the publication helped only marginally on postage. Remember that even charging $30.00 extra per year for Air Mail postage we lose up to $20.00 per subscription. Subscribers and advertisers have been generous with their support but we need more to continue with the same quality of publication and especially to improve **Shells and Sea Life. We CAN NOT** continue to absorb all of the costs and do not want to increase the subscription rates further. We want to keep the magazine within the reach of everyone.

We will continue with monthly publication and increase the content significantly over the coming months. The new format will allow for more material in each issue, including black and white photographs. We intend to include much more material on fossils and paleontology to satisfy the interest subscribers have expressed. **Shells and Sea Life** will also increase coverage of related sea life although **SHELLS** continue to be the primary coverage. Before the end of 1985, **Shells and Sea Life** will be read by more than 5,000 people monthly. If advertisers and subscribers continue to grow we will be able to increase pages and color usage in the issues.

We hope that you will continue to support us with your subscriptions and information for the magazine. Thanks to many people for information for recent issues of **Shells and Sea Life.** Among them are: J. Elsen, M.L. Jaume, K. Jensen, R.G. Molenbeek, C. Poizat, and I.S. Roginskaya. The reprints and notes are very valuable and absolutely necessary to the production of the magazine. We are always pleased to receive review copies of new books and will provide a review in the next available issue of **Shells and Sea Life.** Authors and publishers should address review copies to the Editor.

We also appreciate exchange copies of other publications. Clubs and individuals interested in exchanging information **monthly** should write for details. We have arranged to accept Master Card and VISA payments for subscriptions and book purchases. We will take shell books in trade for subscripitions. We will gladly accept donations to help underwrite the publication costs.

The postal service's handling of magazines has long been a subject of criticism. New regulations implemented in February, 1985, require that 2nd class mail be forwarded automatically and without charge for 60 days after they receive a change of address but the postman on the route has probably not read of that fact. We continue to receive a torn off label noting that the magazine was not forwardable or that the address has changed. We have already paid for printing and mailing the issue (which costs more than the subscription rate) and cannot remail the same copy (which no longer exists). The only solution is to mail a new copy and charge the subscriber $3.50.

Please do send us notice of changes of address well in advance — we simply cannot absorb the cost of mailing a second copy. A certain number of these labels are returned with absolutely the correct address on them. We don't know why. When we write to the subscriber they respond with the same exact address to the letter and we remail using a copy of the original label. Your address should use the same town name as the post office you receive mail from. If you are in doubt, ask your postman.

SHELLS and SEA LIFE was formerly known as the OPISTHOBRANCH NEWSLETTER. The magazine is open to articles and notes on any aspect of malacology or related marine life. Articles submitted for publication are subject to editorial board review. Articles should be submitted typed and double-spaced. For additional information send for free booklet "Suggestions for Preparing Manuscripts for SHELLS and SEA LIFE."

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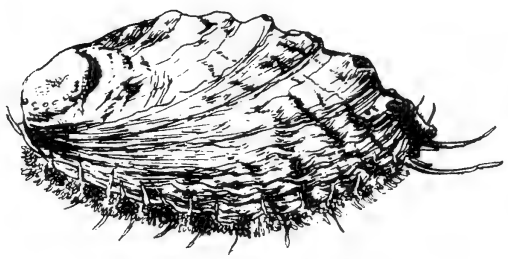
Sacoglossans I have just returned from a 2-weeks vacation in the Greek island Rhodes. The water there was still fairly cold, so I didn't attempt much collecting. However, I did get 3 species of *Elysia*, 1 small *Placida dendritica* and 1 small *Aplysia* sp. from a dense growth of *Bryopsis* spp. on the leeward side of a breakwater. I now have color slides of the 3 *Elysia* spp. and would like to submit a short note on my observations on these animals, with illustrations. However, I don't know if you prefer color slides or prints [We prefer color prints]. — Kathe Jensen, Zoologisk Museum, Universitetsparken 15, DK 2100 Copenhagen, Denmark

Berthella californica I have been on a fishery research vessel in the Bering Sea. Collected 6 specimens of *Berthella californica* from the southeastern Bering on 26 January, 1985, in 9-12 m. Water temperature about 4.5° C. This is quite a range extension from British Columbia [Canada]. — Rae Baxter, Alaska Dept. of Fish & Game, P.O. Box 96, Bethel, AK 99559



READER FORUM

Comments on "Crazy Popular Names by Scientists." As Chairman of the Committee on Scientific and Vernacular Names of Mollusks, I feel obliged to comment on R. Tucker Abbott's article "Crazy Popular Names by Scientists." My major comment has to be on my initial feelings when reading it already published: I was totally surprised. Tucker has been a member of AMU's Common Names Committe since long before I became chairman — about eight years now. In May 1983, this committee was transferred to CSM, which retained the two original committee members (Tucker Abbott and Dave stansbery), added a few more members as appropriate, and changed the name and thrust of the project from that of establishing common names for mollusks to establishing a species list of North American mollusks with accompanying distributions and, where desired (but notice, not for all species), to provide a common name, thereby standardizing a name from the myriad of available common names. Tucker also is an author and editor of the list he criticizes as though someone else is responsible.

I take exception to many statements in his article.

First, "Given a choice, all malacologists and most readers of **SHELLS and SEA LIFE** will use the scientific names." Although I am a malacologist/Marine ecologist and a reader of **SHELLS and SEA LIFE**, I certainly wouldn't dream of going into a restaurant, fish market, down to the docks, or impressing my friends at a party with my vast reservoir of species names for fish and shellfish. In fact, I usually do not use Linnean classification in conversations, to avoid pomposity. I use common names.

Second, "... one way to belittle such publications is to create as much confusion as possible about common names." I cannot agree with the implication that the sincere, time-consuming effort of 7 committee members, 19 authors, approximately 100 reviewers, and others who have contributed so much to this effort over the past two years (Steve Long, for instance, who volunteered the time and expense to publish the draft list for review) could be considered by anyone as an attempt by "threatened ... professional biologists" to create confusion about comon names. Rather, if Tucker follows through with his comment "the list of land shells is almost as bad, and one I would never use in preparing my forthcoming 'Compendium of Land Shells'," then surely that is the example of a professional malacologist creating confusion.

Third, I personally do not like the comment "Some common names have been taken from illiterate clam fishermen." It is discriminatory. The many fishermen I know are highly intelligent and not in the habit of inventing common names. I work for the National Marine Fisheries Service which has active lobbying, literate commercial and recreational fishermen. I do not see a problem in accepting names used only locally, since that is what a common name is all about. His examples of "Floater, spike, highnut, clubshell, and bloofer" do not violate the tenets of good taste, one of the principles used in assigning common names [see **SHELLS and SEA LIFE** 16(9):144]. There's no reason I can think of why "They do not belong in modern popular literature;" whereas, Tucker's example of "pisclam" (however it is spelled) does not.

Fourth, the comment "Here are some official AMU names" is wrong on several counts. The September issue of **SHELLS and SEA LIFE** [16(9):142] announced that a "draft preliminary list" was "being presented to an expanded shell audience for further review and comment" and that selected comments would be published, thereby providing a forum for discussion. All comments received have been responded to and the draft lists correspondingly revised where appropriate. The whole reason for AMU accepting Steve Long's offer to publish the draft lists for review was to get comments and reviews from as many malacologists and conchophiles as possible — a real team effort if you will. This is the reason I feel obligated to respond to Tucker's article. This has been a concerted effort for many and we wanted more. Typos, incorrect scientific names, omissions of new species, out-of-date familial phylogenetic relationships, species outside the study scope (continental United States and Canada out to a depth of 200 meters), and homonyms or inappropriate selection of commons names were for reviewers to help find. This "official list" is not official until CSM and AMU formally accept it and present it to the American Fisheries Society for review and publication.

Fifth, the aside "(and remember that the AMU follows the fish people by not capitalizing common names ...)" is not correct. A "strawman" list was prepared by committee members for the August 1983 CSM/AMU meeting to reveal major problems in undertaking such a large team exercise. Prior to the CSM meeting, the committee listed, discussed, and offered recommendations for resolutions to the problems they encountered. They discussed specifically, and agreed not to capitalize common names. Twenty specific recommendations in addition to the general recommendation to adopt AFS's principles were made by the committee to CSM and accepted unanimously by CSM. In turn, AMU accepted CSM's resolution unanimously. For me, the issue of capitalizing common names for CSM's list was formally decided two years ago when AFS would have modified their principles to accommodate CSM and AMU, had they had a problem. CSM and AMU did not request modification of that principle. This in no way limits a respective author from capitalizing molluscan common names in the literature if he so desires.

Finally, I want to acknowledge Tucker's contributions to the committee and as author. These comments of mine in no way are meant to detract from his efforts on behalf of the large effort we have all made to prepare and refine a list comprising approximately, 6,700 species of mollusks. Instead, I hope to convince you, the reader, that the list needs your sincere attention. If you "could care less" about common names, then concentrate your efforts on the species list of your taxonomic specialty. Instead, if you really care about reducing confusion and selecting the most appropriate common name, then let me or any author know, either at AMU this year or send us a note. You may also write to Steve Long, publisher of **Shells and Sea Life**. Here is the list of authors:

1. Terrestrial gastropods. Fred G. Thompson, The Florida State Museum, Museum Road, Gainesville, FL 32611, Arthur E. Bogan, William L. Pratt, Dorothea Franzen, Kenneth Emberton, Jane Deisler, Amy S. VanDevender

2. Freshwater gastropods. Fred G. Thompson, Charlotte M. Porter

3. Marine gastropods. William G. Lyons, 4227 Porpoise Dr. S.E., St. Petersburg, FL 33705, James F. Quinn, Jr.

4. Polyplacophorans. William G. Lyons

5. Marine bivalves. R. Tucker Abbott, P.O. Box 2255, Melbourne, FL 32901, Eugene Coan, Donna D. Turgeon

6. Freshwater bivalves. David H. Stansbery, Arthur E. Bogan, Dept. of Malacology, Academy of Natural Sciences, 19th and the Parkway, Philadelphia, PA 19103

7. Scaphopods. William K. Emerson, American Museum of Natural History, Central Park West at 79th St., New York, NY 10024, Margaret McFadien Carter, John N. Kraeuter

8. Aplacophorans. Amelie Scheltema, Woods Hole Oceanographic Institute, Woods Hole, MA 02543

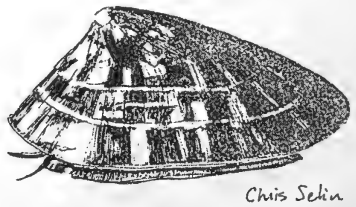
9. Cephalopods. Clyde F.E. Roper, Division of Mollusks, NHBE 517, Museum of Natural History, Smithsonian, Washington, DC 20560

Dr. Donna D. Turgeon, Chief, Regulations Unit, National Marine Fisheries Service, F/M12, Page Bldg. II, 3300 Whitehaven St. NW, Washington, DC 20235

* * * * *

Plate Limpet

Notoacmaea scutum



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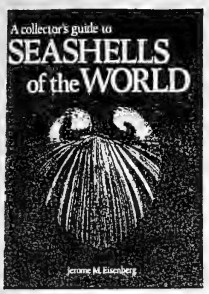

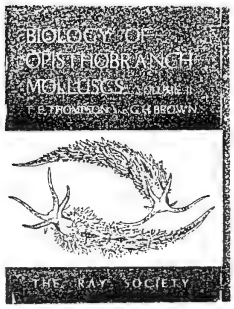

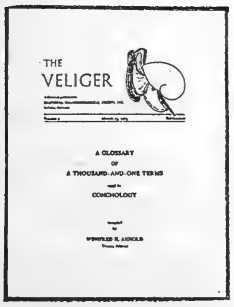

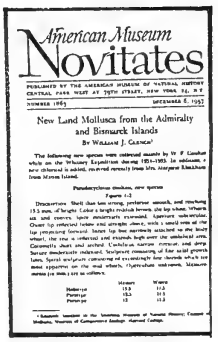

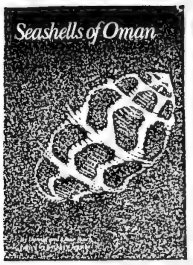

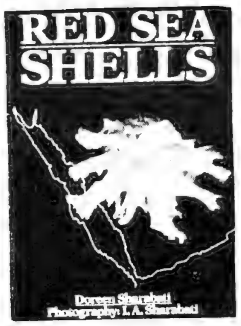

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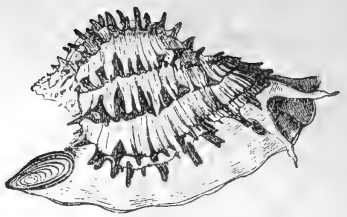

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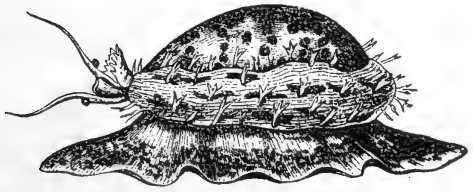

Fig. 425. — Animal de *Cypræa tigris*, Linné (Quoy et Gaimard).

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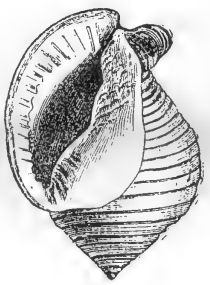

Fig. 414. — *Cassis Grateloupi*, Deshayes.

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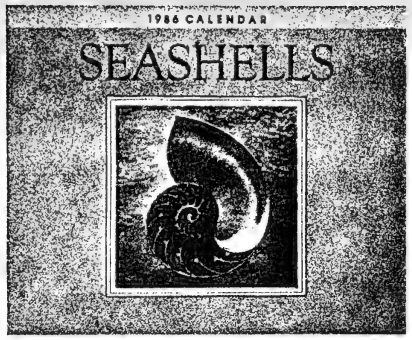

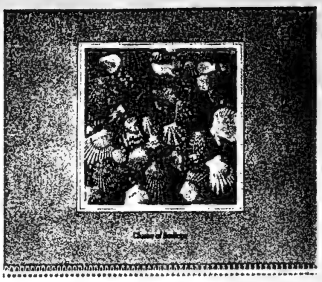

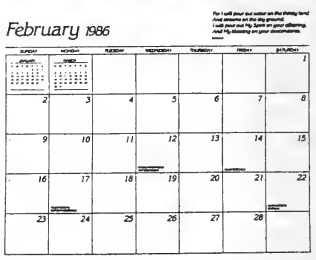

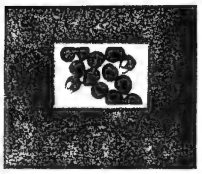

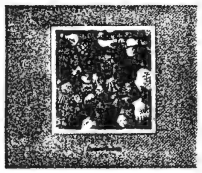

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Vernacular Names of Freshwater Bivalves. I take this opportunity to address some of the remarks R. Tucker Abbott (1985) made regarding the AMU list of scientific and vernacular names of North American mollusks, specifically those concerning the freshwater bivalves. I have three points to make.

First of all, I apologize to all of the freshwater clam fishermen of North America for Abbott's unfortunate and rude remarks. Abbott's comments on the "common name" list appear to be based on a misunderstanding of the difference between vernacular and common names. In this instance, names applied by clam fishermen are vernacular names and only when these names are widely and commonly used to they become "common names." The list of scientific and vernacular names as it stands is a list of vernacular names.

Second, patronyms and capitalization were discussed by the Vernacular Names Committee which recommended that the mollusk list follow the format and conventions of the list of fishes published by the American Fisheries Society. The committee's recommendations were approved by the Council of Systematic Malacologists and the AMU. Patronyms used as vernacular names are really misnomers because the named person is not the owner of the species, but merely the person for whom the species was named.

Third, the list of unionid names, both scientific and vernacular, are the result of the combined efforts, and agreement by approximately 40 people, not a fiat by a single individual. More than 25 papers on unionids were searched to determine which vernacular names had been used historically and names for 175 taxa were found, most of which have been in use for at least 70 years. The oldest freshwater bivalve vernacular name so far documented was noted by Rafinesque (1819) for the snuffbox, *Epioblasma triquetra* (Rafinesque). Abbott (1985:93) remarked "There are much better common names possible for freshwater mussels — ones that can be recognized as common names, are easily remembered and are associated with the scientific name." Although objectionable to Abbott, people throughout the Interior Basin seem to have no problem using such names as washboard, pocketbook, and butterfly (which is not in the genus *Elliptio*, contrary to Abbott's assertion). Other names such as the bloofer, catspaw, or forkshell are only locally used due to the restricted distribution of the species. However, most of the vernacular names included in the list are truly common names, since they are in general use. The majority of the published names are for either species frequently encountered or of commercial importance. These vernacular names are a part of North American folk taxonomy and local history. I feel it would be a disservice to the objectives of the list of vernacular names to throw out well-established and "common" names because they do not fit a preconceived notion of a "good" common name.

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Dr Arthur E. Bogan, Department of Malacology, Academy of Natural Sciences, 19th and the Parkway, Philadelphia, PA 19103.

* * * * *

Exploring a dealer's inner stock I hate to be the bearer of bad news, but if you hope to specialize in a particular family of mollusks, the passive approach of simply mailing in your order and waiting for the shells to arrive won't yield the best specimens. It's sad but true that the really outstanding one-of-a-kind items never even make the dealer's list, and the few that do are snatched up by the first couple of phone orders. Fortunately, there are ways of "beating the system", four of which are outlined here.

One way to see a dealer's "inner stock" is to send in a want list with the instruction to mail your desired items right off as they come in. However, there are some problems with this method. Not all dealers are equally attentive to want lists. Some merely file them away, out of sight and out of mind. The other, more subtle side effect of sending want lists to several dealers at the same time is that you may suddenly get deluged with 20 "clones" of 2 or 3 species. This is because one supplier may handle many dealers with regard to particular shells. If you don't mind sending back the "extras", there is nothing wrong with this approach, but considering today's postal rates, it's probably best to find one or two dealers who will consistently honor your want lists and stick with them.

As mentioned earlier, people who phone a dealer right away usually get most of the material they want. Surprisingly, the best time to call is before a list comes out, not when you receive it. All it takes is one previous call for you to miss out on an exciting shell, so opt for a preview of coming attractions rather than walking in late for the movie!

If you have neither the time or the money to be consistently making long distance calls, and lack the powers of E.S.P. to know when a list is imminent, one method of getting exceptional material is to ask the dealer to mail you unidentified specimens of the groups you're most interested in. Most parties are very cooperative in this regard, and will either give you a discount or free shells for your trouble. Through the diligent application of this technique, many specimens that would not otherwise be listed can become part of your collection.

Finally, if you are lucky enough to live near a particular dealer, by all means try to arrange a trip to his home or shop. Many shells are never listed because they are in small quantities or belong to remote families -- you'll be surprised what you'll find during even a casual visit! If the dealer doesn't have a personal collection, so much the better. It's reassuring to know that every super fabulous beauty will be put in stock, not tucked away in a private collection.

Getting a comprehensive selection of such elusive families as *Latiaxis*, Epitoniums and Tellins is never easy. The best specimens will always go quickly, rendering the ordinary method of mailing in an order ineffective. By trying the techniques above, you will get to know the dealer on a one-to-one level, and will be able to give him a more accurate idea of your individual collecting needs. A unlisted shell, unlike an unlisted phone number, is never frustrating and can add immensely to the beauty and value of your collection!

David DeLucia, 7 Sunset Hill Drive, Branford, CT 06405

PERSONAL NOTES

Aspella vokesiana Houart, 1983. This is the photo to replace the one lost by the printer (S&SL 17(5): 159. Our apologies again to Dr. Vokes and to our readers. We will be happy to print a larger photo if someone can provide a good black and white print.

Dr. Thomas V. Borokowski I will appreciate if you, or any of the readers of **Shells and Sea Life** can give me any information on where I can contact Dr. Borokowski who has done a great deal of research on the molluscs of rocky intertidal shores, especially on the periwinkles (genus *Littorina*). — Luis D. Beltran, Ernesto Cadiz St. #26, Juncos, PR 00666

Nudibranchs of Southern Africa If anyone has paid for this book and not yet received a refund, please write to Gordon Verhoef, P.O. Box 892, Cape Town 8000, South Africa or contact Terry Gosliner at the California Academy of Sciences (Golden Gate Park, San Francisco, CA 94118). The book will hopefully be published soon in California.

Erratum In Richard Goldberg's article (S&SL 17(1):30) *Labyrinthus* lost a "y" in the last line. Sorry about my poor typing. — Editor

Dr. George L. Kennedy, a Geologist with the U.S. Geological Survey in Menlo Park for seven years, joined the staff of the Los Angeles County Museum of Natural History in April. Dr. Kennedy will serve as Assistant Curator of Invertebrate Paleontology and continue his studies of Pleistocene marine terrace faunas of the eastern Pacific. Also, in preparation of a revision of the Recent Pholadidae (piddocks) of Japan, he would greatly appreciate the opportunity to examine any specimens of *Penitella* that readers may have from Alaska, eastern USSR, and (or) Japan. — Dr. George L. Kennedy, Los Angeles County Museum of Natural History, 900 Exposition Blvd., Los Angeles, CA 90007

[Editor — This list was compiled before the release of Burgess's "Cowries of the World." We felt it would be a valuable companion to that book.]

Phil Clover's Cypraea check list

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This list will be different than most in that it is a check list of all valid species of *Cypraea*, plus most of the currently known subspecies. With my 25 years experience in collecting, naming and selling cowries, this list is my opinion now and may vary from other authors such as Burgess and Walls. In Schilders first work published in 1938, he listed 165 species and 186 subspecies based on geographical separation and the last complete checklist I know of, Cernohorsky in 1963, listed 186 species and 197 subspecies. Since the most authors deal with about 200 valid species and every two or three years Donohue publishes, in The Veliger, which author considers what species as valid. In the Schilder's last work "A Catalog of Living and Fossil Cowries" (1971) they dealt with nearly 4,000 names. In the following list the most distinct subspecies will be underlined; sizes are listed in millimeter (mm) and are the maximum — minimum range known for each species.

achatidea Sowerby, 1837. Mediterranean Sea. 22-44 mm
inopinata Schilder, 1930. Senegal.
oranica Crosse, 1896. Algeria.
longinqua Schilder, 1938. Angola.
albuginosa Gray, 1825. West Mexico. 12-33 mm
nariaeformis Schilder, 1930. Galapagos Island
algoensis Gray, 1825. South Africa. 16-32 mm
allsonae Burgess, 1983. another *teres* form
amphithales Melville, 1888. South Africa. 25-33 mm
angelicae Clover, 1974. West Africa. 19-30 mm
angioyorum Biraghi, 1978. South India. 28-32 mm
angustata Gmelin, 1791. South Australia. 18-36 mm
albata Beddome, 1898. South Australia
molleri Iredale, 1931
subcarnea Beddome, 1896
verconis Cotton and Godfrey, 1932
annettae Dall, 1909. West Mexico. 22-52 mm
aequinoctialis Schilder, 1933
annulus Linne, 1758. Philippines. 10-34 mm
camelorum Rochebrune, 1884. Zanzibar
noumeensis Marie, 1869. Eastern Polynesia
pura Vayssiere, 1923. South Africa
scutellum Schilder & Schilder. Indian Ocean
arabica Linne, 1758. Philippines. 25-105 mm
asiatica Schilder, 1938. Japan.
brunnescens Cate, 1964. West Australia
dilacerata Schilder, 1938. Ceylon
gibba Coen, 1949. Thailand
immanis Schilder, 1938. East Africa
niger Roberts, 1885. New Caledonia
westralis Iredale, 1935. Northwest Australia
arabicula Lamarck, 1810. West Mexico. 16-35 mm
argus Linne, 1758. Philippines. 42-107 mm
contrastriata Perry, 1811. East Africa
ventricosa Gray, 1824. Marshall Islands
armeniaca Verco, 1912. South Australia. 75-104 mm
artuffeli Jousseaume, 1876. Japan. 11-23 mm
asellus Linne, 1758. East Africa. 10-31 mm
bitaeniata Geret, 1903. Solomon Islands
latefasciata Schilder, 1930. Australia
rostrata Raybaudi, 1979. New Caledonia
vespacea Melville, 1888. Philippines
astaryi Schilder & Schilder, 1971. Marquesas Is. 17-23 mm
aurantium Gmelin, 1791. Fiji, Philippines. 58-117 mm

barclayi Reeve, 1857. South Africa. 20-26 mm
beckii Gaskoin, 1836. Philippines. 7-16 mm
beleri Walles, 1980 = dwarf *iamarckii*
bernardi G. Richard, 1974. French Polynesia. 11-19 mm
bistrinotata Schilder & Schilder, 1937. Indian Ocean. 10-23 mm
keelingensis Schilder & Schilder, 1940. Cocos - Keeling
mediocris Schilder, 1938. Philippines
sublaevis Schilder & Schilder, 1938. Marshall Islands

boivini Kiener, 1843. Philippines. 14-36 mm
amoena Schilder, 1927. Japan
cuatoni Kosuge, 1983. Philippines
bregeriana Crosse, 1868. New Caledonia. 16-33 mm
broderipii Sowerby, 1832. Indian Ocean. 59-105 mm
somalica Raybaudi, 1981. Somalia
burgessi Kay, 1981. Hawaii. 22-39 mm, like *latior*

camelopardalis Perry, 1811. Red Sea. 31-81 mm
mariae Schilder, 1924. Aden
capensis Gray. South Africa. 24-38 mm
caputdraconis Melville, 1888. Easter Island. 17-45 mm
caputserpentis Linne, 1758. Indian Ocean. 15-43 mm
argentata Dautzenberg, 1933. French Polynesia
caputanguis Philippi, 1849. Eastern Australia
caputophidi Schilder, 1927. Hawaii
mikado Schilder & Schilder, 1938. Japan
reticulum Gmelin, 1791. Philippines
carneola Linne, 1758. Philippines. 17-94 mm
bouteti Burgess & Arnette, 1981. French Polynesia
crassa Gmelin, 1791. Red Sea
propinqua Garrett, 1879. Polynesia
sowerbyi Anton, 1839. Indian Ocean
cassiaui Burgess, 1965. French Polynesia. 19-25 mm
catholicorum Schilder & Schilder, 1938. Solomons. 10-21 mm
caurica Linne, 1758. Philippines. 19-69 mm
atrata Sullioti, 1924. New Caledonia
blaesa Iredale, 1939. West Australia
derosa Gmelin, 1791. India
dracaena Born, 1778. East Africa
elongata Perry, 1811. Kenya
longior Iredale, 1935. Eastern Australia
quinquefasciata Roding, 1798. Persian Gulf
thema Iredale, 1939. Solomon Islands
cernica Sowerby, 1870. Indian Ocean. 10-37 mm
kermadecensis Powell, 1958. New Zealand
marielae C. Cate, 1960. Hawaii
ogaswarensis Schilder, 1944. Japan
prodiga Iredale, 1939. Eastern Australia
tomlini Schilder, 1930. New Caledonia
viridicolor Cate, 1962. West Australia
cervinetta Kiener, 1843. West Mexico. 32-113 mm
cervus Linne, 1771. Florida. 48-190 mm
peilei Schilder, 1932. Southern Caribbean
childreni Gray, 1825. Polynesia. 12-34 mm
lemurica Schilder & Schilder, 1938. Indian Ocean
novaecaledoniae Schilder & Schilder, 1952. New Caledonia
samurai Schilder, 1940. Japan
chinensis Gmelin, 1791. Philippines. 17-56 mm
amiges Melvill & Standen, 1915. Hawaii
sydneyensis Schilder, 1938. Eastern Australia
tortirostris Sowerby, 1906. South Africa
variolaria Lamarck, 1810. Mauritius
violacea Rous, 1905. Zanzibar
whitworthi Cate, 1964. West Australia

cicercula Linne, 1758. Philippines. 8-23 mm
lienardi Jousseaume, 1874. East Africa
cinerea Gmelin, 1791. Caribbean. 15-42 mm
citrina Gray, 1825. South Africa. 16-30 mm
clandestina Linne, 1767. Indian Ocean. 8-25 mm
candida Pease, 1865. West Australia
moniliaris Lamarck, 1810. Philippines
passerina Melvill, 1888. East Africa
cohenae Burgess, 1965. South Africa. 30 mm
coloba Melvill, 1888. Gulf of Aden. 20-40 mm
greegori Ford, 1893. South India
comptoni Gray, 1847. South Australia. 17-32 mm
casta Schulder & Summers, 1963. South Australia
mayi Beddome, 1898. South Australia
trenberthae Trenberth, 1961. South Australia
wilkinsi Griffiths, 1959. South Australia
contaminata Sowerby, 1832. Philippines. 8-16 mm
distans Schilder & Schilder, 1938. Indian Ocean
malaysiae Schilder & Schilder, 1940. Solomon Islands
stohleri Cate & Schilder, 1968. Philippines
coronata Schilder, 1930. South Africa. 28-33 mm
coxeni Cox, 1873. Solomon Islands. 14-30 mm
hesperina Schilder & Summers, 1963. New Britain
steineri C. Cate, 1969. Guadalcanal
cribellum Gaskoin, 1849. Indian Ocean. 12-19 mm
cribraria Linne, 1758. Malaysia. 10-40 mm
comma Perry, 1811. East Africa
exmouthensis Melvill, 1884. New Caledonia
fallax Smith, 1881. West Australia
melwardii Iredale, 1930. Queensland, Australia
northi Steadman & Cotton, 1943. Fiji
orientalis Schilder & Schilder, 1940. Japan
cruickshanki Kilburn, 1972. South Africa. 20-35 mm
jukui Shikama, 1974. South Africa
cuatoni Kosuge, 1983. Philippines. 25-27 mm. form of *boivini*
cumingii Sowerby, 1832. Polynesia. 9-30 mm
cleopatra Schilder, 1938. Marquesas Islands
cylindrica Born, 1778. Philippines. 18-52 mm
sista Iredale, 1939. Northern Territories, Australia
sowerbyana Schilder, 1932. West Australia

dayritiana Cate, 1963. Philippines. 15-22 mm
decipiens Smith, 1880. West Australia. 42-70 mm
albina Raybaudi, 1977. NW Australia (= *mariellae* ?)
declivis Sowerby, 1870. South Australia. 15-32 mm
globosa Raybaudi, 1977. South Australia
occidentalis Iredale, 1935. Southwest Australia
depressa Gray, 1824. South Pacific. 23-55 mm
dispersa Schilder, 1939. Indian Ocean
dillwyini Schilder, 1922. Society Islands. 10-16 mm
diluculum Reeve, 1845. East Africa. 11-36 mm
virginalis Schilder, 1938. Seychelles
donmoorei Petuch, 1979 = *mus* Linne

eburnea Barnes, 1824. Fiji. 23-56 mm
mara Iredale, 1939. New Caledonia
edentula Gray, 1825. South Africa. 17-34 mm
alfredensis Schilder & Schilder, 1929. South Africa
eglantina Duclos, 1833. South Pacific. 35-82 mm
couturier Vay, 1905. Japan
niger form . New Caledonia
perconfusa Iredale, 1935. West Australia
englerti Summers & Burgess, 1965. Easter Island. 18-27 mm
erosa Linne, 1758. East Africa. 16-71 mm
chlorizans Melvill, 1888. Malaysia
lactescens Dautzenberg & Bouge, 1933. Polynesia
nigricans Pallary, 1926. New Caledonia
phagedaina Melvill, 1888. Philippines
pulchella Coen, 1949. New South Wales, Australia
purissima Vredenberg, 1919. North Australia
straminea Melvill, 1888. Red Sea
errones Linne, 1758. Philippines. 13-43 mm
azurea Schilder, 1968. West Australia
bimaculata Gray, 1824. South India
coerulescens Schroter, 1804. Melanesia
coxi Brazier, 1872. Eastern Australia
erythreensis Sowerby, 1837. Red Sea. 15-29 mm
esontropia Duclos, 1833. Mauritius. 12-36 mm
exusta Sowerby, 1822. Red Sea. 54-91 mm
obscura Raybaudi, 1979. Red Sea

felina Gmelin, 1791. Eastern Africa. 10-27 mm
fabula Kiener, 1843. Gulf of Oman
listeri Gray, 1824. Maldive Islands
melvilli Hidalgo, 1906. Melanesia
paucipuncta Schilder & Schilder, 1938. Philippines
velesia Iredale, 1939. Queensland
vatu Steadman & Cotton, 1943. Fiji
fernandoi C. Cate, 1969. Philippines. 20-30 mm
fimbriata Gmelin, 1791. East Africa. 7-21 mm
durbanensis Schilder & Schilder, 1939. South Africa
marmorata Schroter, 1804. Philippines
unifasciata Migheis, 1845. Hawaii
fischeri Vayssiere, 1910. New Hebrides. 12-23 mm
friendii Gray, 1831 Southwest Australia. 42-104 mm
albinea Raybaudi, 1978. West Australia
melanica Raybaudi, 1977. West Australia
vercoi Schilder, 1930. Southwest Australia
fultoni Sowerby, 1903. South Africa. 50-68 mm
fuscodentata Gray, 1825. South Africa. 24-43 mm
coronata Schilder, 1930. East Africa. (now considered a separate species)
gloriosa Shikama, 1971. South Africa
fuscorubra Shaw, 1909. South Africa. 24-45 mm
gondwanalandensis Burgess, 1966. South Africa
iutsui Shikama, 1974. South Africa
similis Gray, 1831. South Africa

gangranosa Dillwyn, 1817. Singapore. 9-27 mm
reentsii Dunker, 1852. South India
gaskoini Reeve, 1846. Hawaii. 11-27 mm
peasei Sowerby, 1870. Oahu Island, Hawaii
globulus Linne, 1758. Philippines. 10-24 mm
brevirostris Schilder & Schilder, 1938. East Africa
sphaeridium Schilder & Schilder, 1938 French Polynesia
gondwanalandensis Burgess, 1966 - *fuscorubra* Shaw
goodalli Sowerby, 1832. Polynesia. 8-20 mm
fuscomaculata Pease, 1865. Samoa
gracilis Gaskoin, 1848. Philippines. 9-28 mm
hilda Iredale, 1939. West Australia
japonica Schilder, 1931. Japan
macula Angas, 1867. Queensland, Australia
notata Gill, 1858. Red Sea
granulata Pease, 1862. Hawaii. 15-43 mm
grayana Schilder, 1930. Indian Ocean. 17-78 mm
aberrans Raybaudi, 1979. Red Sea
guttata Gmelin, 1791. New Guinea. 32-78 mm
australis Raybaudi, 1979. Queensland, Australia
azumai Schilder, 1960. Japan
bicallosa Raybaudi, 1979. Philippines
surinensis Raybaudi, 1978. Thailand

haddnightae Trenberth, 1973. Southwest Australia. 25-35 mm
hammondae Iredale, 1939. Queensland, Australia. 10-18 mm
dampierensis Schilder & Cernohorsky, 1965. NW Australia
raysummersi Schilder, 1960. Philippines
helvola Linne, 1758. Philippines. 8-36 mm
argella Melvill, 1888. East Africa
callista Shaw, 1909. Marshall Islands
citrinicolor Iredale, 1935. West Australia
hawaiiensis Melvill, 1888. Hawaii
mascarena Melvill, 1888. South India
meridionalis Schilder & Schilder, 1938. South Africa
hesitata Iredale, 1916. New South Wales, Australia. 54-121 mm
albina Raybaudi, 1977. Eastern Australia
beddomei Schilder, 1930. New South Wales
howelli Iredale, 1931. South Australia
nordica Raybaudi, 1979. Queensland, Australia
hirasei Roberts, 1913. Japan. 40-61 mm
dani Raybaudi, 1978. Philippines
philippina Raybaudi, 1981. Philippines
queenslandica Schilder, 1966. Queensland, Australia
hirundo Linne, 1758. Philippines. 8-24 mm
cameroni Iredale, 1939. West Australia
francisca Schilder & Schilder, 1938. East Africa
neglecta Sowerby, 1837. Japan
peropima Iredale, 1939. Eastern Australia
rouxi Ancey, 1882. Samoa
histrio Gmelin, 1791. Indian Ocean. 23-79 mm
westralis Iredale, 1935. Northwest Australia
humphreysii Gray, 1825. New Caledonia. 10-26 mm
yaloka Steadman & Cotton, 1943. Fiji
hungerfordi Sowerby, 1888. Japan. 22-43 mm
callosa Raybaudi, 1979. Taiwan
coucomi Schilder, 1964. Queensland, Australia

incurvata Walles, 1980 = *lamarckii*
interrupta Gray, 1824. South India. 14-28 mm
irrorata Gray, 1828. Society Islands. 8-17 mm
isabella Linne, 1758. East Africa. 11-54 mm
atriceps Schilder & Schilder, 1938. Polynesia
controversa Gray, 1824. Hawaii
lekalekana Ladd, 1934. Queensland, Australia
mexicana Stearns, 1893. Clipperton Island
rumphii Schilder, 1938. Philippines
isabellamexicana Shasky, 1961. Panama. 28-45 mm

jeaniana Cate, 1968. West Australia. 35-102 mm
aurata Raybaudi, 1979. West Australia
melanica Raybaudi, 1978. West Australia
joycae Clover, 1970. Taiwan. 50-60 mm

katsuae Kuroda, 1960. Japan. 18-23 mm
kieneri Hidalgo, 1906. East Africa. 8-24 mm
depriesteri Schilder, 1933. Philippines
landeri Schilder & Griffiths, 1962. Polynesia
marcia Iredale, 1938. New South Wales, Australia
reductesignata Schilder, 1924. Indian Ocean
schneideri Schilder & Schilder, 1938. Solomon Islands
kingae Rehder & Wilson, 1975. Pitcairn Island. 14-19 mm
kuroharai Kuroda & Habe, 1961. Taiwan. 37-53 mm

labrolineata Gaskoin, 1849. Philippines. 8-31 mm
helenae Roberts, 1869. Solomon Islands
nashi Iredale, 1931. Queensland, Australia
lamarcki Gray, 1825. East Africa. 18-54 mm
redimita Melvill, 1888. Thailand
langfordi Kuroda, 1938. Japan. 41-68 mm

moretonensis Schilder, 1965. Queensland, Australia
lentiginosa Gray, 1825. Pakistan. 19-38 mm
buharensis Jonklaas & Nicolay, 1977. South India
dancalica Jonklaas & Nicolay, 1977. Red Sea
leucodon Broderip, 1828. South Africa. 72-98 mm
angioyna Raybaudi, 1979. Philippines
leviathan Schilder & Schilder, 1937. Hawaii. 53-130 mm
gedlingae Cate, 1968. West Australia
titan Schilder, 1963. East Africa
limacina Lamarck, 1810. Philippines. 12-37 mm
facifer Iredale, 1935. Queensland, Australia
interstincta Wood, 1828. East Africa
ravaya Steadman & Cotton, 1943. Fiji
lisetae Kilburn, 1975. Mozambique. 12-13 mm
luchuana Kuroda, 1960. Okinawa. 15-23 mm
lurida Linne, 1758. Italy. 14-66 mm
minima Dunker, 1853. West Africa
maxima Monterosato, 1897. Mediterranean Sea
oceanica Schilder, 1930. Ascension Island

lutea Gronow, 1781. Philippines. 9-25 mm
bizonata Iredale, 1935. West Australia
profunda Raybaudi, 1978. East Indies
lynx Linne, 1758. East Africa. 18-85 mm
caledonica Crosse, 1869. P9lynesia
nigroguttata Coen, 1949. New Caledonia
vanelli Linne, 1758. Philippines
williamsi Melvill, 1888. Red Sea

macandrewi Sowerby, 1870. Red Sea. 9-23 mm
eguttata Raybaudi, 1978 (called *thomasi* in error)
maculifera Schilder, 1932. Hawaii. 33-89 mm
mantellum Walls, 1980 (new name for *mariae* Schilder)
mappa Linne, 1758. Philippines. 40-97
alga Perry, 1811. East Africa
geographica Schilder & Schilder, 1933
nigricans Crosse, 1875. New Caledonia
panerythra Melvill, 1888. Philippines (pink base)
profunda Raybaudi, 1978. West Australia
rewa Steadman & Cotton, 1943. French Polynesia
subsignata Melvill, 1888. New Caledonia
viridis Kenyon, 1902. Micronesia
margarita Dillwyn, 1817. Philippines. 10-20 mm
tetsuakii Kira, 1959. Japan
marginalis Dillwyn, 1827. South Africa. 19-34 mm
pseudocellata Schilder & Schilder, 1938. Somalia
marginata Gaskoin, 1849. West Australia. 40-70 mm
meridionalis Raybaudi, 1979. South Australia
ketyana Raybaudi, 1978. Northwest Australia
mariae Schilder, 1927. South Pacific. 9-20 mm
maricola Cate, 1976. Philippines. 13-14 mm
mariellae Raybaudi, 1983. Northwest Australia. 56-62 mm
martini Schepman, 1907. Philippines. 13-22 mm
superstes Schilder, 1930. New Caledonia
mauiensis Burgess, 1967. Hawaii
mauritiana Linne, 1758. East Africa. 43-130 mm
calxequina Melvill & Standen, 1899. Hawaii
regina Gmelin, 1791. India
microdon Gray, 1828. Philippines. 6-15 mm
chrysalis Kiener, 1843. East Africa
granum Schilder & Schilder, 1938. Solomon Islands
midwayensis Azuma & Kurohara, 1967. Taiwan. 15-22 mm
miliaris Gmelin, 1791. Japan. 18-56 mm
differens Schilder, 1927. Philippines
diversa Kenyon, 1902. West Australia
inocellata Gray, 1825. Taiwan
minoridens Melvill, 1901. Queensland, Australia. 6-12 mm
orientalis Raybaudi, 1979. South Pacific
suvaensis Steadman & Cotton, 1943. Fiji
miyokoae Habe & Kosuge = *lamarcki*
moneta Linne, 1758. East Africa. 10-40 mm
barthelemyi Bernardi, 1861. Society Islands
harrisi Iredale, 1939. Samoa
icterina Lamarck, 1810. Mozambique
maxima Dautzenberg, 1903. Zanzibar
rhomboides Schilder, 1933. Philippines

mus Linne, 1758. Venezuela. 30-95 mm
bicornis Sowerby, 1870. Venezuela
donmoorei Petuch, 1979. Venezuela
tricornis Jousseaume, 1874. Venezuela
musumea Kuroda & Habe, 1961. Taiwan. 17-23 mm

nebrites Melvill, 1888. Red Sea. 15-41 mm
ceylonensis Schilder & Schilder, 1938. Ceylon
mozambicana Schilder & Schilder, 1938. Southeast Africa
nigropunctata Gray, 1828. Galapagos Islands. 17-41 mm
nivosa Broderip, 1827. Thailand. 37-75 mm
nucleus Linne, 1758. Philippines. 11-31 mm
gemmosa Perry, 1811. Polynesia
granulosa Sowerby, 1870. Fiji
madagascarensis Gmelin, 1791. East Africa
sturanyi Schilder & Schilder, 1938. Red Sea

obvelata Lamarck, 1810. Society Islands. 10-30 mm
perrieri Rochebrune, 1884. Tuamotu Islands
oceliata Linne, 1758. India. 14-56 mm
okutanii Walles, 1980 = *lamarcki* or *caurica*
onyx Linne, 1758. Philippines. 24-57 mm
adusta Lamarck, 1810. East Africa
melanesiae Schilder & Schilder, 1937. Solomon Islands
melanica Raybaudi, 1978. Thailand
nymphae Jay, 1850. Diego Garcia
persica Schilder, 1938. Pakistan
succincta Linne, 1758. South India
ostergaardi Dall = *thomasi* Crosse
ovum Gmelin, 1791. Philippines. 16-41 mm
chrysostoma Schilder, 1927. New Guinea
hipercallasa Raybaudi, 1979. South Pacific
obscura Raybaudi, 1977. Solomon Islands
palauensis Schilder & Schilder, 1938. Micronesia
owenii Sowerby, 1837. Mauritius. 8-27 mm
menkeana Deshayes, 1863. Mauritius
vasta Schilder & Schilder, 1938. South Africa

pallida Gray, 1824. India. 17-32 mm
insulicola Schilder, 1938. Singapore
pallidula Gaskoin, 1849. Philippines. 11-29 mm
rhinoceros Souverbie, 1865. New Caledonia
simulans Schilder & Schilder, 1940. West Australia
pantherina Lightfoot, 1786. Red Sea. 37-118 mm
vinosa Gmelin, 1791. Red Sea
perlae Lopez & Chiang, 1975. Northwest Australia. 38-55 mm
petitiana Crosse, 1872. Senegal. 17-40 mm
albinea Raybaudi, 1979. West Africa
picta Gray, 1824. Cape Verde Islands. 19-38 mm
piperita Gray, 1825. New South Wales, Australia. 16-31 mm
bicolor Gaskoin, 1849. South Australia
dissecta Iredale, 1931. New South Wales
emblema Iredale, 1931. South Australia

poraria Linne, 1758. Indian Ocean. 10-28 mm
aberrans Raybaudi, 1979. New Caledonia
scarabaeus Bory, 1827. Philippines
wilhelmina Kenyon, 1897. West Australia
porteri Cate, 1966. Philippines. 45-55 mm
pulchella Swainson, 1823. Taiwan/ 23-48 mm
novaebritanniae Schilder & Schilder, 1939. New Britain
pericalles Melvill & Standen, 1904. Gulf of Oman
vayssierei Schilder & Schilder, 1937. Ethiopia
pulchra Gray, 1824. Oman. 21-76 mm
pulicaria Reeve, 1846. Southwest Australia. 13-25 mm
euclia Steadman & Cotton, 1946. West Australia
punctata Linne, 1771. East Africa. 7-22 mm
atomaria Gmelin, 1791. Philippines
decolorata Gray, 1824. Indo-Pacific
iredalei Schilder & Schilder, 1938. Queensland, Australia
trizonata Sowerby, 1870. French Polynesia
pyriformis Gray, 1824. Philippines, 17-34 mm
kaiseri Kenyon, 1897. West Australia
smithi Sowerby, 1881. North Australia
pyrum Gmelin, 1791. Mediterranean Sea. 22-52 mm
angolensis Odhner, 1923. Angola
insularum Schilder, 1928. Northwest Africa
maculosa Gmelin, 1791. Spain
senegalensis Schilder, 1928. Senegal

quadrimaculata Gray, 1824. Philippines. 14-32 mm
garretti Schilder & Schilder, 1938. Samoa
thielei Schilder & Schilder, 1938. Queensland, Australia

rabaulensis Schilder, 1964. Melanesia. 16-30 mm
rashleighana Melvill, 1888. New Caledonia. 11-45 mm
eunota Taylor, 1916. Hawaii
reevei Sowerby, 1832. Southwest Australia. 26-45 mm
globosa Raybaudi, 1978. West Australia
robertsi Hidalgo, 1906. Panama. 13-32 mm
rosselli Cotton, 1948. West Australia. 47-64 mm
albosignata Raybaudi, 1979. West Australia

sakuraii Habe, 1970. Taiwan. 40-60 mm
sanguinolenta Gmelin, 1791. Senegal. 15-28 mm
saulae Gaskoin, 1843. Singapore. 14-32 mm
crakei Cate, 1968. Northwest Australia
immaculata Raybaudi, 1978. Indo-Pacific
jensostergaardi Ingram, 1939. Caroline Islands
manilensis Raybaudi, 1978. Luzon, Philippines
nugata Iredale, 1935. Northern Queensland, Australia
peledi Raybaudi, 1978. Maldive Islands
profunda Raybaudi, 1978. Northwest Australia
siasiensis Cate, 1960. Sulu Sea, Philippines
visayanensis Raybaudi, 1978. Cebu, Philippines
schilderorum Iredale, 1939. Polynesia. 21-43 mm

scurra Gmelin, 1791. East Africa. 23-57 mm
amarata Morch, 1852. Indonesia
indica Gmelin, 1791. Philippines
nigella Sullioti, 1924. New Caledonia
retifera Menke, 1829. Hawaii
vono Steadman & Cotton, 1943. Polynesia
semiplota Mighels, 1845. Hawaii. 7-28 mm
annae Roberts, 1869, Oahu, Hawaii
polita Roberts, 1868. Hawaii
serrulifera Schilder & Schilder, 1938. Polynesia. 6-13 mm
sharoni Walles, 1980 = *lamarcki*
spadicea Swainson, 1823. California. 30-81 mm
albinistic form, Mexico
spurca Linne, 1758. Mediterranean Sea. 12-39 mm
acicularis Gmelin, 1791. Florida
atlantica Monterosato, 1897. Canary Islands
inaequipartita Monterosato, 1897. Red Sea
sanctaehelenae Schilder, 1930. Ascension Island
verdensium Melvill, 1888. West Africa
staphylaea Linne, 1758. Philippines. 7-28 mm
consobrina Garrett, 1879. Tuamotu Islands
descripta Iredale, 1935. North Queensland, Australia
laevigata Dautzenberg, 1932. East Africa
nukukau Steadman & Cotton, 1943. Fiji
stercoraria Linne, 1758. Senegal. 26-97 mm
conspurcata Gmelin, 1791. West Africa
nigrescens Sulliotti, 1924. West Africa
rattus Lamarck, 1810. Angola
stolida Linne, 1758. Philippines. 15-46 mm
brevidentata Sowerby, 1870. Queensland, Australia
crossei Marie, 1869. Solomon Islands
dampieria Raybaudi, 1979. Northwest Australia
diauges Melvill, 1888. East Africa
fluctuans Iredale, 1935. North Australia
kwajaleinensis Senders, 1983. Kwajalein Atoll
rufodentata Biraghi, 1976. Maldive Islands
thukau Steadman & Cotton, 1943. Fiji
subteres Weinkauff, 1881. Tuamotu Islands. 14-32 mm
subviridis Reeve, 1835. East Australia. 18-44 mm
anceyi Vay, 1905. New Caledonia
dorsalis Schilder & Schilder, 1938. Northwest Australia
vaticina Iredale, 1931. South Australia
sulcidentata Gray, 1824. Hawaii. 20-77 mm
summersi Schilder, 1958. Fiji. 12-21 mm
surinamensis Perry, 1811. Brasil. 20-48 mm
bicallosa Gray, 1831. Florida

talpa Linne, 1758. Philippines. 22-104 mm
imperialis Schilder & Schilder, 1938. East Africa
lemurica Raybaudi, 1979. Seychelles
saturata Dautzenberg, 1903. Marshalls. Hawaii. Panama
teramachii Kuroda, 1938. Japan. 57-78 mm
teres Gmelin, 1791. Indian Ocean. 14-48 mm
alveolus Tapperone, 1882. East Africa
burgessi Kay, 1981. Hawaiian Islands (same as *latior*)
dampieria Raybaudi, 1979. West Australia
latior Melvill, 1888. Hawaiian Islands. Panama

walkeri Sowerby, 1832. Taiwan. 15-37 mm
continens Iredale, 1935. East Australia
profunda Raybaudi, 1978. West Australia
surabajensis Schilder, 1937. Philippines
weaveri Walles, 1980 = *barclayi*

xanthodon Sowerby, 1832. North Queensland. 16-35 mm
eugeniae Cate, 1975. Southwest Australia
hartsmithi Schilder, 1967. New South Wales, Australia

zebra Linne, 1758. Florida. 32-125 mm
dissimilis Schilder, 1924. Brasil
ziczac Linne, 1758. Philippines. 10-26 mm
misella Perry, 1811. East Africa
signata Iredale, 1939. New South Wales, Australia
undata Lamarck, 1810. Maldive Islands
vittata Deshayes, 1831. Melanesia
zonaria Gmelin, 1791. West Africa. 15-43 mm
gambiensis Shaw, 1909. Gambia

pentella Iredale, 1939. French Polynesia
pellucens Melvill, 1888. Hawaii; Panama
subfasciata Line, 1807. Queensland, Australia
tessellata Swainson, 1822. Hawaii; Taiwan. 15-50 mm
testudinaria Linne, 1758. Philippines. 74-140 mm
ingens Schilder & Schilder, 1938. East Africa
testudinosa Perry, 1811. Australia
teulerei Cazenavette, 1846. Gulf of Oman. 34-70 mm
thersites Gaskoin, 1849. South Australia. 45-98 mm
contraria Iredale, 1935. Southwest Australia
melanica Raybaudi, 1978. South Australia
thomasi Crosse, 1865. Hawaii. 10-24 mm
tigris Linne, 1758. Philippines. 42-153 mm
lynchichroa Melvill, 1888. Polynesia
nigrescens Gray, 1824. New Caledonia
pardalis Shaw, 1852. Gulf of Akaba
schilderiana Cate, 1961. Hawaii
turdus Lamarck, 1810. Persian Gulf. 16-57 mm
foedata Suiliotti, 1924. Gulf of Oman
paraalina Dunker, 1852. Gulf of Aquaba
winckworthi Schilder & Schilder, 1938. Gulf of Oman
zanzibarica Suillotti, 1911. Madagascar

ursellus Gmelin, 1791. Philippines. 6-19 mm
amoeba Schilder & Schilder, 1938. Melanesia

valentia Perry, 1811. Philippines. 63-98 mm
flava Raybaudi, 1979. New Guinea
ventriculus Lamarck, 1810. Micronesia. 32-75 mm
venusta Sowerby, 1846. West Australia. 45-86 mm
albinea Raybaudi, 1978. West Australia
catei Schilder, 1963. West Australia
dorata Raybaudi, 1973. Southwest Australia
episema Iredale, 1939. West Australia
melanica Raybaudi, 1978. West Australia
rosea Raybaudi, 1973. West Australia
roseopunctata Melvill, 1888. South Australia
rossentensis Schilder, 1963. Southwest Australia
verhoefi Burgess, 1982. South Africa. 24-40 mm
was called *gondwanalandensis* see *fuscorubra* Shaw
vitellus Linne, 1758. Philippines. 20-100 mm
dama Perry, 1811. East Africa
orcina Iredale, 1931. Australia
polynesiae Schilder & Schilder, 1938. Fiji
sarcodes Melvill, 1888. Ceylon
vredenburgi Schilder, 1927. Indonesia. 13-33 mm
vulgivagus Walls & Burgess, 1980 new name for *vredenburgi*

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